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HENRY V. POOR, Editor.

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Saturday, October 6, 1849.

Iron Ores and the Iron Manufacture of the United States.

Continued from page 609.

NEW YORK

Adirondac Iron Works.—In the midst of the Adirondac group of mountains, about fifty miles west from Lake Champlain, are found many beds of magnetic iron ore of greater extent than in any other part of this northern region. The rock formation which contains them, is one of unusual character, met with no where else, to my knowledge, in the United States. But here, in the heart of the granitic formation, it is spread out over an extensive district, forming the highest mountains of this Alpine region. In the New York State geological reports it has received the name of *Hypersthene rock.* It is a mixture of the mineral hypersthene with feldspar, this latter mineral being frequently in the larger proportion, and of the opalescent variety, called labradorite. The rock is strewed over the country in boulders of all sizes, of spotted light bluish and greyish color, smooth and extremely hard. Near the ledges, as in the village of Adirondac, the loose masses fallen from the hills are nearly as large as the houses; their shape is irregular, and they have no grain, by which they might be easily worked. In the ledge the rock has no regular parting seams. It is, therefore, of little value for any practical purpose, except to use in such shapes, as it happens to come, for building walls. No rock can be more durable.—The western edge of its formation is only about three miles from Adirondac. There it meets a red porphyritic granite; in which, close to the junction of the two formations, is another huge deposit of magnetic ore. Still farther west, on the borders of Newcomb Lake, the granite contains large beds of limestone, some of it of very pure character, and some of it highly siliceous—the latter variety well fitted to flux magnetic ores, which generally contain little silica.

In going from the lake at Crown Point to Adirondac, the route is for the first twenty-seven miles through the townships of Crown Point and Schroon into Newcomb, over rough roads often extremely muddy, and a country only interesting for its resources in iron ores and its mountain scenery.—Newcomb is a township full of small lakes. On the outlet of one of these called Lake Sandford, which is about five miles long, a dam has been built by the Adirondac Iron company, by which the water is thrown back through the lake, and beyond, in all eleven miles, making in the summer season good navigation for boats to within a mile of the furnace. This dam was to give power for saw mills and for rolling mills or forges, or any other works it might be deemed advisable to establish. This place is called Tahawus. Passing from it up into the lake, the scenery rapidly becomes more grand, and the highest mountains in the State are in full view not far off towards the northeast. On the shores of this lake are some of the largest beds of ore. Half a mile up its inlet the stream becomes too rapid for farther navigation, and a good road a mile long completes the journey to the village.—Above this, about half a mile is another lake called Lake Henderson, similar to that below. This is the principal reservoir and source of the water, which furnishes the power for the works.

One of the principal beds of ore is that represented on the east side of Lake Sandford, and called the *Sandford ore.* It has been critically examined and measured by Professor E. Emmons, and his description in detail may be seen in the New York state geological reports. Some shallow excavations were made to uncover the bed, where it was hidden beneath the soil; and without arriving at its actual walls, a triangular area of 514 feet in width by 1667 feet on a north and south course was proved to be occupied by ore. North and south of this area the vein pursues its course beneath tabular masses of the hypersthene rock; and on the line of it are other outcrops of the ore, which seem to indicate its continuation for two and a half miles. Whether the vein will prove to be as extensive or not is of little consequence. The quantity exposed to view near the lake is more than can be consumed for centuries. This is within an eighth of a mile of the lake, on elevated ground, which descends by a regular grade to the water, affording an easy road and natural drainage. The ore delivered into boats is taken to the head of navigation, and then carted to the furnace, a distance altogether of two miles and fifty three rods. A new furnace now in progress of construction is more conveniently situated for receiving this ore directly from the boats. In the bed much of the ore appears to be a pure mixture of the two oxides of iron free from gangue. It proves, however, on analysis to be more siliceous than the ordinary magnetic oxides of iron. The minerals associated with it are feldspar, mica, hornblende, hypersthene, garnet and a small portion of sulphuret of iron. Some of these prevail over the ore in parts of the bed; but Professor Emmons estimates one portion, 300 feet wide, to be unmixed ore. Of the peculiar character and composition of this ore I shall speak more fully in describing its working in the blast furnace and bloomery.

Other beds of iron ore underlie the village, and crop out around the furnace itself. One of these, called the *Mill Pond*, or *coarse grained ore*, is opened and worked on the bank of the stream, a few rods above the works. Of its extent no estimate can be given any more than one could estimate in a district of granites, gneiss, and porphyries the relative proportion of each of these rocks, when all were hidden here and there beneath the soil. It is enough to know that the ore can be worked as it is, like a granite quarry, and no walls be found to limit the bed. If they seem sometimes to be met with, they prove to be but interposed masses of hypersthene rock, and new quarries of ore are opened beyond them. The quantity of ore is so great that that within 40 feet of the surface and half a mile of the furnace may be considered almost inexhaustible. The ore of this bed differs from the Sandford in appearance it not being of so granular a texture, and not separating into

crystalline grains like shot; yet it is distinguished by the name of the *coarse grained ore*; for it is not of homogeneous structure, but consists of particles of different lustre (not granular) firmly united in one mass. These have been supposed from some experiments of the late David Henderson Esq., to be the per-oxide and protoxide of iron, thus seen distinct from each other. The color of the ore is jet black—not generally lustrous; but a portion of the bed is made up of ore, which breaks into rhomboidal sheets like slates, whose face is highly glistening. In the ore are often found large rude crystals of hypersthene of the form of rhomboidal prisms with perfect cleavage obliquely across the prism, and with faces most delicately striated. A mineral resembling serpentine occurs with the ore, and between it and the hypersthene wall rock in a thin layer.—It appears to be an undiscribed combination of silica, iron, magnesia and water of the chlorite family, the magnesia replacing per oxide of iron. I have analysed it with care, and found its composition to be as follows:—

Silica,	31,11
Magnesia,	0,66
Water,	14,93
Prot. oxide of iron	36,85
Alumina,	15,88
Lime,	0,40
	99,83

Carbonate of lime occurs in small quantity with this ore, incrusting it with their layers; and through portions of it sulphuret of iron may occasionally be detected sparingly diffused.

A third bed of ore is opened in the ridge of hypersthene rock east of the stream at an elevation overlooking the village, and not more than an eighth of a mile from the furnace. This is called the *fine grained ore*, being of finer texture and more granular than the last described. It resembles somewhat the Sandford ore and the line of bearing of the vein southward is towards the Sandford mine, Professor Emmons considers its width about 70 feet, and that it has been traced in length 5742 feet. It is partially intermixed with rock, but where it is quarried a large body of unmixed ore is exposed to view. Its associated minerals are similar to those at the other mines, calcareous spar in thin layers incrusting the fragments, and a little sulphuret of iron being dispersed through it.

It cannot be important to more than simply refer to the several other localities of ore in the hypersthene rock of this vicinity, any one of which seems to possess inexhaustible supplies; and all of which are found to produce ores of the same general character and action in the furnace.

The bed, however, before alluded to, in the granitic rock four miles west of Lake Sandford, called the *Cheney ore bed*, is worthy of more particular notice. It is exposed in a break or gap in the hill of red granite, on the east side of which is exposed the hypersthene rock. On one side this gap is bounded by a wall of ore twenty or thirty feet in height; its thickness is concealed by the fallen debris of ore, rock and soil; but I should judge that at least a width of the bed of twenty feet might be relied upon. The appearance of the ore is some what like that of the fine grained ore, rather close and compact in its structure; but in its chemical properties I find it to differ from all the ores of the hypersthene rocks in giving a glassy cinder in the crucible with earthy fluxes, which I have not succeeded in obtaining in a large number of experiments with any of these. For this reason I judge it to be well worthy of more careful and thorough trials in the blast furnace, to remedy if possible the difficulties attendant upon the reduction of the Adirondac ores. This subject will be treated of more fully in the succeeding number of the Journal, The Cheney ore is a hard ore to mine in consequence of its close texture; and according to the general impression that an ore hard to mine will be hard to work in the furnace, it may not prove valuable. But no injurious minerals are seen to accompany it, and I have not detected any sulphur in it. H

The Coal Mines of Eastern Virginia.

While travelling through the southern part of Virginia a short time since, I took occasion to visit the coal pits of the Clover Hill Company. These pits are situated in Chesterfield county, and are distant by railroad 28 miles from Petersburg, and about 30 from Richmond.

There is also a railroad communication with tide water upon the Appomattox river, by a branch road diverging from the Richmond and Petersburg road, 8 miles from the latter place, and running to Port Walthall, 2½ miles. The Clover Hill Company constructed their road, 18 miles long, at a cost of $100,000. It diverges also from the Roanoke and Petersburg railroad, 10 miles miles from the latter place, and 13 from the former, and runs nearly west to the Clover Hill property. By these roads the pits have direct railroad communication with the city of Richmond, in a distance of 30 miles, with the city of Petersburg in a distance of 28 miles, and with the Appomattox river at tide water, in a distance of 22½ miles.

At Port Walthall, the new terminus on the Appomattox, the company have constructed suitable wharves, side tracks, and coal yards, and large vessels can with ease take in their loads at this place for any port in the United States.

The presence of coal at Clover Hill was accidentally discovered in 1840, by J. H. Cox, Esq., the proprietor of the estate, in sinking a small drain. The outcrop was struck by the workmen, and this led Mr. Cox to examine the quality and probable amount of the deposit.

These examinations led to the sinking of several pits, and the workings are now very extensive.—The coal is bituminous, and equal in quality to the best Liverpool. There are at present five pits in active operation, and the supply last year was 1'-500,000 bushels.

Mr. Cox, the President of the Clover Hill Co., and former proprietor of the mine, having disposed of his individual interest to the company, has now the general superintendence of its affairs.

From the great angle, 40 degrees, at which the coal dips, it requires extensive and deep shafts and planes to reach it. I have entered and examined 2 only of the workings, one of which, the "Beaver pits," is entered by means of an inclined plane, which enters the earth at an angle of 40°, and runs at this angle for a distance of 620 feet; it then strikes a level, where a divergence takes place for a short distance, and another plane descends at the same angle for 3 or 400 feet more.

The descent from the top of the first plane is accomplished by means of steam power. But the second one is done by mule or horse power. These pits have been worked to a great extent and I should judge from observations, that the galleries extend for a distance of 5 or 6 miles. The coal is found here in a vein of from 8 to 15 feet in thickness, and is very easily worked. The daily supply from these pits is 3,000 bushels.

There is another pit 150 feet deep, a short distance above the Beaver pits, owned and worked by two gentleman, these I did not enter, but understood that the supply is 1000 bushels daily: They are now engaged in constructing a plane, and expect shortly to be able to double that amount.

The old Clover Hill pits are also about 150 feet deep and have been the longest worked of any upon the estate. They are now busily engaged in "robbing" (as it is called) these pits, making it somewhat dangerous for visitors, and I did not venture down.

The results of the 'robbing' process are distinctly visible upon the surface; in the shape of various immense holes caused by 'robbing' out the coal supports left in the first excavations. As soon as these supports are robbed out, the superincumbent earth falls in, leaving as a natural result a number of large holes in the surface. In one place the whole surface for a large area has settled some 4 or 5 feet. The supply at these pits is daily about 2000 bushels.

The company having exhausted partially the old workings, commenced in May, 1848, the sinking of a pair of new shafts, which were completed in July, 1849. These shafts were sunk 450 feet perpendicular before coal in sufficient quantity was found.

The shafts are round, about 8 feet in diameter, and for some 30 feet from the surface are bricked up. At this distance down, the sand rock of this country was struck, and with two or three breaks was followed to the bottom. These breaks are also bricked up. Mr. Cox accompanied me in a trip down these shafts, and I was much gratified with the results of it.

We placed ourselves in the bricket, and the signal being given—down we went. The sensation of descending this great distance, and at a rapid uniform speed, is very peculiar and indiscribable; (it can only be compared to the sensation of a person who is dreaming of falling from some great elevation.) We were soon out of the reach of daylight, and our miners' lamps showed us the sides of the shaft, smooth and round, flying by us, at the rate that would astonish a locomotive. Upon reaching the bottom, however, I was well repaid for my trip, for we were in the most beautiful vein of coal I ever saw. This vein is fully 20 feet thick, and of a superior quality. The roof and floor of the vein are as smooth and polished as if they had been planed. The coal here is in fact almost inexhaustible, and these shafts will answer for 20 years or more. Every thing connected with the new works looks as if it was intended for use. The workings below are already laid out for extensive use. The present supply is over 1000 bushels daily; but it will soon be doubled, as the excavations increase in extent. After I had looked to my satisfaction, we stepped into the bucket, the signal was given, and ere I had time to think, we were once more up top of the ground. Upon looking for the power that brought us thus suddenly from the bowels of the earth, I found a new 40 horse power engine, of the manufacture of A. & W. Denmead & Son, of Baltimore, that works as truly and nicely as a lever watch; and I was almost tempted, from the beauty of the machinery and the apparent strength of the ropes and gearing, to step into the bucket and try the trip again. The coal from these workings weighs about 74 pounds to the bushel, and can now be delivered at tide water for $3 to $3 20 per ton of 30 bushels. The railroad charge is at present $1 05 to $1 10 per ton freight for 22½ miles. This charge I should suppose very high, and it will without doubt soon be reduced, when this coal can be furnished at much less

than the present prices. The present daily supply from all the pits is about 6000 bushels. This amount can with the present conveniencies be doubled. There are 5 engines of from 30 to 40 horse power, each busily employed, and the number engaged in and around the mines will not vary far from 500. These mines possess an advantage in point of distance from tide water, that no other mines in this country can possess; and I have no doubt but that coal can be furnished and of a superior quality, from these pits cheaper than from any other works in the country. R

For the American Railroad Journal.

Ohio Railroads.

Those who have not carefully explored the Mississippi Valley, have a very imperfect conception of the resources of the West, which are already in rapid process of developement. Ohio, the most easterly State in the valley, with a population of two millions of hardy, enterprising and industrious people, is struggling to possess those facilities which will connect her with the commerce of the world.—By canal navigation the Ohio river is now accessible from the interior at five different points, and Lake Erie at two. The two trunk lines of canal cross the State from north to south.

Individual enterprise is undertaking the work of facilitating trade and travel to and from and thro' the State by means of railways. The first railroad completed across the State is from Cincinnati to Sandusky City, a distance of 220 miles. This thoroughfare is formed by connecting the Mad river and Lake Erie railroad, with the Little Miami and Springfield railroad. The Sandusky Bay being the only natural harbor on the southern shore of Lake Erie is a very favorable terminus for this road, and the one next mentioned. The bay is formed by two peninsulas extending from the mainland, whose terminal points approach within three-fourths of a mile of each other, and form a perfect breakwater, for the water sheet within their embrace. It is about 12 miles long, with an average breadth of three miles. Within, its water is deep enough for any vessels which navigate our lakes. The road from the lake into the harbor, owing to the existence of a sandbar, is intricate or crooked. This bar can be removed at a trifling expense, and will be before the present season closes. The General Government has never expended one cent towards making or improving a harbor at this place. $15,000 was appropriated to "preserve" it, at a time when the lake was making a breach through the peninsula.

The City of Sandusky has provided a dredging machine, with which to straighten the road into the harbor. But for the fearful visitation of the cholera with which this place was afflicted, during the past summer this work would have been effected ere now.

It rather surprising, that this, being the only national harbor on the southern shore of Lake Erie, has been so wholly neglected by the Government. Take for instance the neighboring port of Cleveland. There to create a harbor, or in the language of the appropriations "for the improvement of the harbor of Cuyahoga," there have been appropriated from time to time $149,413 15. With this sum a safe harbor has been formed, when once entered, but when most needed it is most difficult to make because of the narrow channel between the piers.—The plan of extending piers out into the lake, without reference to the river is now being adopted, which adds greatly to the facilities of steamboat business in mild weather. During the late war with Great Britain, Com. Perry made Sandusky Bay his head quarters, and the Navy Department have found no other place within our wide territory suitable for a naval depot. Should Canada not be annexed the day may come when it will be required for that purpose.

The next railroad is the Mansfield and Sandusky City railroad. It is 56 miles long, and commenced working in 1846. Under the charter of the Columbus and Lake Erie railroad company, it will be extended sixty miles further south to Newark. All the earthwork of this extension is now finished, the superstructure is being laid down, and the iron provided. The company expects to have a portion of it in operation this winter and the whole completed early next spring. It is designed to continue this thoroughfare to the Ohio river at Portsmouth, by way of Lancaster, Circleville and Chilicothe.

No road in this State will embrace so many of the leading interests as this. The wheat, corn, grazing and mineral regions will be embraced in it.—Its whole length will be about 220 miles. The country is already populous, productive and wealthy. The surveys have been commenced under the charter of the Scioto and Hocking valley railroad company.

From Xenia to Columbus, 57 miles, a railway is now being constructed, which the company hope to have in operation during the coming winter or early in the spring. As this road connects at Xenia with the Little Miami railroad a continuous track of iron rails will extend from the capital of the State to the Queen City of the west, a distance of about 120 miles. This road is on the line of great east and west inland travel, and as it will be extended east, under the Central Ohio railroad co's. charter to connect with the Baltimore & Ohio road, it is second to none in importance. This latter company is now locating its road between Zanesville, one of the first manufacturing towns in the State, through Newark to Columbus a distance of some 55 miles, and it is hoped the road will be completed in two years from next spring, between these places; and in progress to the Ohio river within the next twelvemonth.

The Pennsylvania and Ohio railroad is already under contract extending from Pittsburg to Mansfield.

From Cleveland, the most beautiful city on Lake Erie, a road 134 miles in length is now in progress to Columbus. The President in his report promises to have 35 miles completed "by the setting in of winter," and under his energetic supervision we may look for a speedy completion of the whole line.

A road is also in progress from Cleveland to Pittsburgh. Very enterprising and worthy men are conducting this enterprise and there is no doubt of its early consummation.

From Dayton, one of our most flourishing inland towns, to Cincinnati, *via* Hamilton, a road is rapidly progressing, which it is expected will be in operation during the next year. Another from Springfield to Dayton is now nearly ready for the iron rails, to be extended by another company now vigorously in action to Richmond Indiana.

It will be seen from all this, that we have completed and in operation in this State 276 miles of railroad, and will have by next spring 212 miles more, and will have within the next three years, 690 miles in addition, in all about 1200 miles.

It is difficult to imagine, much more so to estimate the commercial revolution which the completion of these enterprises will produce. The great west with all her resources and productions will be opened to the world. Eastern arithmetic has no rule by which to compute the extent of trade from this source.—The experiment of the past furnishes no data by which to estimate it, because by existing facilities freight moves so slowly as to preclude the transmission of innumerable articles, the produce of the garden, the dairy and the farm, from the west to the markets of the east. But complete these railroads in a good and substantial manner and Cincinnati and New York will be only 36 hours asunder.—Let us estimate, from Cincinnati or Portsmouth to Sandusky 220 miles, 8 hours. Sandusky to Buffalo 250 miles, 9 hours. Buffalo to Albany 325 miles in 12 hours. Albany to New York, 150 miles in 5 hours; 945 miles in 34 hours, at the mean rate of 29¼ miles an hour, consequently we have two hours to share in making this whole distance in 36 hours. Increase the speed to 35 miles an hour and the whole distance will be run in 27 hours. Or from Central Ohio, say Columbus Newark, Zanesville or Springfield in three hours less.

A population so large and increasing so rapidly in a country so productive, cannot fail to sustain and sustain well, all the railroads now in progress in that great State. Not only its exports, but its imports will be immense and as time advances must increase.

In her soil, Ohio has a source of wealth more enduring, more certain and more productive than the mines of California.

Railroads in Indiana.

We extract the following from the Volunteer, published at Shelbyville, Indiana, for the purpose of presenting a connected view of the railroads in that State, completed and in progress. After speaking of the Wabash and Erie Canal, the article goes on to say—

We have the Madison and Indianapolis railroad completed and in full and successful business, commencing at Madison on the Ohio an hundred miles below Cincinnati, and passing through Vernon, Columbus, Edinburgh and Franklin to Indianapolis—a distance of eighty-six miles. The stock of this road is very valuable and yields an enormous dividend on its capital. It centres at the capital of the State, and will consequently be in connection with four other independent railroads now in forward state of construction, viz:

1st. The Terre-Haute and Indianapolis railroad commencing at Terre-Haute on the Wabash river and Erie Canal, which is a direct line between Indianapolis and St. Louis, and running through Greencastle and an agricultural country for distance of 74 miles to Indianapolis.

2d. The Lafayette and Indianapolis railroad, commencing at Lafayette, on the Wabash river and Erie canal, and extending to a southeastern direction to Indianapolis—a distance of 70 miles.

3d. The Indianapolis and Peru railroad, commencing at Indianapolis and running through Noblesville to Peru, on the Wabash river and Erie Canal—a distance of 70 miles in a northeast direction from Indianapolis.

4th. The Indianapolis and Bellefontaine railroad, commencing at Indianapolis, and extending in a northeastern direction through Pendleton, Andersontown, Muncietown and Winchester to the east line dividing the States of Indiana and Ohio—a distance of 80 miles—where it connects with the railroad in a direct line to Bellefontaine in Ohio—thus connecting at Bellefontaine with the Cincinnati and Sandusky railroad, and with the railroad which will soon be constructed betwern Bellefontaine and Pittsburgh.

This last road. it is apparent, will give the most direct connection of any with the capitol and heart of Indiana where all these roads centre, and all the eastern cities

In addition to the foregoing, there is now completed and in operation a railroad from Edinburgh on the Madison and Indianapolis road to Shelbyville—a distance of 16 miles.

There is also a railroad located, of which thirty miles are graded, from Jefersonville on the Ohio river opposite Louisville, to Columbus, Indiana, situated forty miles south of Indianapolis on the Madison railroad.

Then again there is a railroad now located and partly under contract from Lawrenceburgh to Greensburgh, from which latter point it is to be extended to Edinburgh to intersect the Madison and Indianapolis road and thence on to Martinsville to penetrate the inexhaustible coal region of White River, or to Shelbyville there to intersect the Edinburgh the Knightstown, and the Rushville railroads, all of which centre at Indianapolis. And in this connection I must not forget particularly to mention that there is a railroad from Shelbyville to Knightstown twenty six miles in length, the superstructure of which is now being laid, the iron obtained, and ten miles of which the cars will run the present year.—This road meets at Shelbyville the Rushville railroad, which runs from Shelbyville nearly in the direction of Cincinnati to Rushville, eighteen miles in length, of which the grading is done, the superstructure partly laid, the iron purchased, and on part of which the cars will run the present year.

All the roads above mentioned, which are not completed, are in a rapid state of construction by solvent companies, and when completed, it will be seen that the Lawrenceburgh; the Madison and Indianapolis; the Jeffersonville; the Terre Haute and Indianapolis; the Lafayette and Indianapolis, the Peru and Indianapolis, Bellefontaine and Indianapolis; the Edinburgh and Shelbyville, the Knightstown and Shelbyville, the Rushville and Shelbyville railroads, will all intersect each other at Indianapolis—or in other words all those points will be connected by railroad.

These roads will probably all be completed within from one to three years; where most of the business towns and the richest regions of agriculture in the State of Indiana will have a direct railroad communication with Indianapolis and with each other and by way of the Bellefontaine road with all the eastern railroads and cities.

The Mystery of the Traffic Table.

The traffic table is the touchstone of railways: it is to railways what the flapper was to the Laputan philosophers. It awakens speculators from their reveries, tests the merits of engineering experiments and determines the question of questions as applied to each railway—does it pay? The time will come when the traffic table will be scanned even more intently than the share list. The latter will take its tone from the former—indeed it does to a certain extent already; only the working of the traffic receipts not being much attended to, or understood, many shareholders learn for the first time from their report whether the railway is progressing or receding. Such being the case, it becomes most important that the traffic table, and its bearing on the expenses of construction, should be clearly understood. I confess myself to be in want of information, and when I state my difficulty I trust I shall meet with some intelligent reader who will enlighten me. I shall compare the expense of construction and weekly receipt, and idquire what is and what ought to be the connection between them. In order that my selection may not appear to be invidious, I shall take the first English railway on your list, viz., the Birkenhead, Lancashire and Cheshire. This railway confesees to an expenditude of £1,088,804. To pay 5 per cent. on this sum would require £54,440.—Now what is one week's receipts? £797. Multiply this 52 times, and we have as the result £41,444.—Of course I am aware of the objection against taking a single week as a specimen; it may be a very bad week; but it may also be a very good one. This £41,444 is however the average which we assume of the receipts: we have now to inquire what reduction it undergoes before a dividend can be paid. Working expenses average from 40 to 50 per cent: let us take 40 per cent., which amounts to £16,576 If we deduct this from the before mentioned £41,444 the result is unfortunate—it dwindles down to £34,-868. This is an unfavorable contrast with £51,-448; which appears to be necessary, as we have seen, to pay 5 per cent. on the concern. The point I particularly wish to ascertain is, whether these figures decide the point; because if they do, I confess that the sources from which railway dividends are paid must be regarded as mysterious. I have not had time to apply these very simple rules to other railways; but I should like to know if my mode of arriving at the truth is correct; and if not, why not? —*Railway Chronicle.*

Vermont.

The Directors of the Rutland and Burington Railroad are pushing that important work rapidly on to its completion. The track-laying is progressing rapidly between Brandon and Middlebury. Two gangs are employed upon this part of the work; one laying the track southward from Middlebury, the other northward from Mack's Bridge. The two have completed some six or seven miles of the track.—The Bridges are advancing under the energetic auspices of Mr. Blake. The cars were received at Middlebury on Saturday week with great enthusiasm; and we see no reason why the inhabitants of Brandon may not be collected to hail their advent during the course of the present month or early in the next.

It is necessary, however, to bear in mind that the washing of the fall rains, and the necessary defects of the sub grade, will render the regular running of the passenger cars liable to some detention after the track is laid.—*Union Whig.*

A contract was closed on the 18th inst., for grading the Vermont and Canada Railroad, from Essex to St. Albans village. Mr. Balch, who has been a large contractor on the Northern and the Vermont Central Roads, has taken the contract and the work is to commence forthwith.

We learn that a number of responsible gentlemen are passing over the line of the road between this village and Rouse's Point to-day, (Wednesday) with a view to taking a contract for grading the same. The whole line is to be put under contract as soon as convenient, and finished as speedily as ready funds and energetic contractors can carry it through.—*Messenger.*

Vermont Central Railroad. We understand that the Directors of the Company purchased some 70 acres of land at Essex to-day, for the purposes of Station Buildings, grounds, &., at the junction of the road with the Vermont and Canada,—and on highly favorable terms.—*Daily Free Press.*

Illinois.

We Copy from the St. Louis Republican the following in relation to the business of the Illinois and Michigan Canal:

"The great thoroughfare East, is now by the way of the Illinois and Michigan Canal and the lakes.—Large numbers of passengers are daily arriving and departing by the route, in preference, from the low stage of water, to a five or six weeks trip by the Ohio The importations and exports too, are increasing rapidly by the former route, and within the past week or ten days, it is computed that over 1,000 tons of dry goods, hardware, teas, hats, boots, shoes, &c., have arrived in this city, direct from the eastern cities, via Buffalo Chicago, and the exports of sugar, furs, robes, wool, and domestic liquors, syrups, refined sugars, molasses, &c., are astonishingly on the increase."

Virginia.

Richmond and Danville Road.—It gives us great pleasure to anounce to our readers, the complete success of Col. Townes, in raising the sum required to put under contract the last section of the Richmond and Danville Railroad.—*Danville Register.*

Louisa Railroad.—The gross receipts of the Louisa Railroad Company for the last twelve months, from the 1st of July, 1848, to 1st of July 1849, were $71,-626,09; being $14,799,39 more than the receipts of the previous year, or an increase of nearly 28 per cent. The balance on hand on the 1st July, was $15,626,57. A considerable portion of the receipts was expended in enlarging the stock of motive power, rendered necessary by the increased business of the road. If the expenditures made for this purpose be deducted, the balance on hand will be equal to about 8 per cent on the capital in operation during the year.

Wisconsin.

Madison and Beloit Railroad.—The engineer commenced surveying the route for this road on the 27th ult. We learn from the *Janesville* (Wis) *Gazette*, of the 30th, that he proposes to run three lines, and then select the best of the three. It is expected that stock will be taken sufficient to commence making preparations for the road as soon as the busy season is over. The Chicago road will be completed as far as St. Charles, within sixty miles of Janesville, next month. By another fall it will reach Rock river. Active efforts should be made to meet it from Janesville at that time.—*St Louis Era.*

Alabama.

Selma and Tennessee Railroad.—The convention, proposed to be held at Shelby Springs, Alabama, convened at that place on the 27th ult. Nine counties were represented, viz: Marshall, Benton, Talledega, Coosa, Autuaga, Shelby, Bibb, Dallas, and Mobile. The number in attendance was larger than expected. They seemed determined to make a united and earnest effort to accomplish the connection of the Tennessee river with the waters of Mobile Bay. The convention was in session two days, and adjourned to meet at Talladega on the 4th Monday of this month, previously to which the commissioners of the Alabama railroad company, incorporated at the last session of the legislature, were requested to open books of subscription pursuant to the act of incorporation.

Michigan.

Michigan Central Railroad.—The Laporte (Ind) Whig of the 8th says:—We understand that an arrangement has been effected by this company with the commissioners of the Western divison of the Buffalo and Mississipi Railroad Company, by which the right of way has been obtained to extend the Central road from New Buffalo to Michigan City, and the road is to be completed to the latter point in one year, from this fall.

The magnitude of the immense Wire Bridge now in the progress of construction over the Ohio river at Wheeling, will be understood from the following description of it, the items of which are derived from the report of the engineer, Mr. Charles Ellet, Jr.:

The span of the bridge is 1,010 feet from centre to centre of the supporting towers, being 152 feet longer than the celebrated Freibourg bridge, which is the greatest span heretofore constructed. The height of the flooring, at its greatest elevation, is 97 feet above the low water level of the Ohio, giving an elevation of 52 feet above the great flood of 1833, and 58 feet above any other known rise of the stream; a stage of water, by the way, that is so seldom attained, and when attained is never navigated in consequence of the overflow of the banks, the submerging of the bottoms, and the general sweeping off of wood piles, etc., so that all references to and comparisons with it are matters rather of curiosity than of practical utility. On a rise of twenty feet above low water there will be an elevation of 77 feet from the surface of the water to the floor of the bridge.

The summit of the eastern tower is 153½ feet above low water, and 60 feet above the abutment by which it is supported. The flooring is 24 feet wide, with two foot ways, each 3½ feet, and an intermediate carriage way 17 feet wide. The flooring i supported by 12 cables of iron wire, 4 inches in diameter; and 1,380 feet long. These cables rest on iron rollers, placed on the summit of the towers, the movements of which will relieve the towers of the strain which would be occasioned by the contraction and elongation of the wires, consequent on variations of temperature, or the transitory loads that may pass over. The cables are anchored into the heavy masonary of the wing walls at each end of the bridge. The length of the wood work which rests on the cables is 960 feet; its weight 546 pounds per lineal foot or 524,160 pounds, or 262 tons in the whole. Each cable is composed of 550 stands of No. 10 wire.—The weight of each lineal foot of the 12 cables, composed of 6,600 strands, is 330 pounds, making, with the weight of timber, bolts, casting, suspenders, etc., 920 pounds per lineal foot, or 441 tons as the permanent weight of the bridge itself. Now, independent of this, its own weight, the bridge is constructed to support the greatest transitory weight that is ever likely to be, or I may say, can possibly be brought upon it. A column of 16 of the six-horse wagons used on the National road would fill the length of the span from one abutment to the other, The flooring is wide enough to receive two such columns,

and therefore capable of containing 32 such teams at a time; and assuming the average weight of each horse at 700 pounds, and of each loaded wagon at 12-000 pounds, and allowing 500 men of the average weight of 150 pounds each, at the same time, we have an aggregate of 593,400 pounds, or 297 tons as a test of any transitory weight ever likely to be brought upon it. This is about equal to the weight of 700 cattle, or 4,000 men. Now the aggregate strength of the 6,6000 strands of wire composing the 12 cables, at 1,500 pounds tension for each, (and this is ascertained by a machine for the purpose,) is 9,-900,000 pounds, or 4,950 tons. In the ordinary state of the bridge, therefore, they will be capable of supporting *five times* the tension which actually has place, and when the platform is covered with 32 loaded teams they will be capable of resisting *three times the tension produced by the weight of the bridge itself, and three times the additional tension produced by the load upon the flooring*. Thus it would seem that the strength of the cables is more than sufficient for all practical purposes: and all other parts of the structure are in the same proportions.

It is confidently expected, no untoward event occurring in the meantime, that the bridge will be ready for service by the first of November next. *Then* may Wheeling be proud of her great achievement; *then* will she have distinguished herself as having erected one of the noblest, and one of the most useful works of the age.

South Carolina.

Greenville Railroad.

The Keowee Courier of the 23d says:—"We were much pleased during a recent visit to the village of Greenville to learn that an union of the friends of the Columbia and Greenville railroad had been effected, and that Greenville was to unite with the road at Brown's. There would seem to be no doubt, but that the road will now be carried to that place, as $150,000, out of 169,500, which is the highest estimate of the cost of this branch has been subscribed. The friends of the enterprise do not desire to stop at the cost of the road but to carry at least $200,000 into the Company. This will benefit them, inasmuch as it will give an additional impetus to the work, by giving so much additional stock to the company. There can be no doubt that with Greenville for one of the upper termini for this road that the stock will be more profitable."

East Tennessee and Georgia Railroad

The Knoxville Register says, we learn from a gentleman just from that portion of the country, that there are about five hundred hands at work on the East Tennessee and Georgia railroad between the Hiwassee river and Dalton, and that they are pushing the work along rapidly.

Norfolk Cy. R.-Mr. Alvah Crocker does decline the Presidency of the Nortfolk County Railroad, and other gentlemen are mentioned as candidates in his stead. A meeting of the stockholders is to be held October 2d, for the purpose of chosing a presiding director.

North Carolina.

Major W. W. Vass of this city, says the Raleigh Register, has been promoted to the Presidency of the Raleigh and Gaston Railroad, *vice* Col. R. O. Britton resigned; and Chas. J. Williams, Esq., has been appointed Treasurer to succeed Major Vass.

Railroad Travel.

The Lewiston Falls Journal says that the whole number of passengers on the Androscoggin and Kennebec Railroad, during the month of August, was 3733, being upon the average nearly 150 per day.

The Farmer states that the passengers on the Kennebec and Portland road for the same month, as appears by the books, were 9950, divided as follows: Through tickets up, 2010; through tickets down, 1050; way tickets between Bath and North Yarmouth, 6880.

The Androscoggin and Kennebec road will soon be completed to Waterville, when it will receive a large accession of travel.

Ohio.

Mansfield and Newark Railroad.

We are gratified to learn that a letter has been received at Sandusky, from Mr. Higgins, who is now in Europe negotiating for the iron wanted by the company, announcing that he has succeeded in buying 8,000 tons of heavy T rail—enough to iron the road from Newark to Mansfield, and relay a portion of the old track beyond Mansfield. The weight of the iron is 106 tons to the mile, or about 60 lbs to the yard. 3,000 tons, or nearly one-half the purchase, has already arrived at New York.—"So," says the Herald, "our road north will now be completed without delay."

While we congratulate our Newark friends on this happy termination of the difficulties they have encountered in the completion of this work, we must be permitted to remind them that *now* there will remain to the citizens of Licking no plausible excuse for denying an adequate public and private subscription to the Central road. Indeed, we think that that result, with suitable exertions on the part of friends in that county, need no longer be apprehended. We think that the very excellent and unanswerable "Address to the Voters of Licking County," from the pens of Messrs. Sullivan and Hosmer, which appeared in the Newark papers of last week, cannot but exercise also a most favorable influence upon the public mind.—*Zanesville Courier.*

Central Ohio Railroad.—Engineer.—We learn that the committee of directors have determined to confer this important post upon Mr. Preble Wormeley, the gentleman to whom reference has been heretofore made. He is highly qualified to discharge the duties of his responsible station with satisfaction to the Company and to the public.—*Zanesville Courier.*

W. L. Mitchell, Chief Engineer of the Georgia State Road, was in town yesterday. The Colonel informed us that he had come all along the line of the road from Dalton, and was enabled to report that all the work was done, ready for the iron, within two miles of town, with the exception of the bridgers and a few small gaps, which latter would only require two or three days to complete. The bridge builders are finishing their work rapidly, and in superior style. On the unfinished parts of the they can can complete about a half mile of the susuperstructure per week, which will enable them to have it all done in a few weeks. Then, as soon as the bridges are done, the cars will roll into Chattanooga. They will run the cars up to Ringgold for the first time to-morrow, but will not, we are informed, made regular trips up there until the whole is completed. We will set the first of December for the completion of the whole road, with the exception of the tunnel.—*Chattanooga Gaz., 21st inst.*

Cotton Crop of Alabama.

A writer in the Mobile Advertiser makes an estimate of the whole of the cotton crop produced in Alabama for the year ending on the 1st inst., 612,-922 bales averaging 509½ pounds each, or 312,240,-015 pound. This is made as follows:

Weight of 518,706 bales at Mobile, lb.	264,843,253
" North Alabama, sent to Memphis and New Orleans.....	49,170,224
" Sent down the Chattahoochie.	33,125,624
" Consumed in factories, etc....	6,370,313
	353,010,015
From which deduct Mississippi cotton, sent to Mobile—80,000.....	40,770,015
Total product of Alabama.....	321,240,015

Or 612,922 bales, at 509½ pounds per bale, or 892,-117 bales, at 360 pounds per bale; the value of which, 6¼ cents per poun all around is $13,515 063 47.

More Iron Ore.

A new and extensive bed of iron ore, of very superior quality, has been discovered on the land of Messrs. C. W. & J. H. Little, in Jefferson county, on the south side of the Shenandoah river. It is believed that a large portion of the mountain is an iron deposit. The ore already taken from this mine yields about 75 per cent, of pure metal. Who, owning such a treasure, would care for California?—*Winchester Republican.*

Lake Superior Iron.

Copper is not the only valuable product of the Lake Superior country. Another product is found there of great value, perhaps more so than the copper to our state, if they are worked, and the product manufactured within our own state.

Iron ore, yielding 70 per cent of pure iron, is found to be inexhaustible at Carp River. The ore lies on the surface in hills or boulders.

Waterman A. Fisher and six other capatalists from Massachusetts, have already commenced operations for getting out the ore, by putting up machinery, trip-hammers, etc., and will be prepared by the first of June next to contract for the delivery, at any point required for manufacture, from 1,000 to 10,000 tons of iron hammered into what manufacturers call "blooms," or lumps of wrought iron, weighing from one hundred to two hundred pounds.—*Detroit Free Press.*

Our Western Railroad.

If the present prolonged state of low water does not prove to our citizens the stern necessity of a Western railroad to preserve the business and prosperity of this city, then we shall despair of them in all future time.

We have now had some months of extremely low water, and what is the consequence—almost an entire stagnation of business, while all around us the hum of prosperity and active trade shows that we are alone in our unwonted and disagreeable idleness.

In St. Louis, business is extremely brisk; her merchants are worked night and day, and their stocks are nearly exhausted. In Nashville, business is very fine, especially in dry goods. Cincinnati is doing well, as she has communication with the interior by railroads. All our eastern cities are doing a good and profitable business.

In Pittsburg we hear one universal complaint of dullness, while every eye is turned to watch the clouds, and the continual inquiry is heard, when shall we have rain? Our manufacturers have immense stocks on hands waiting for the purchasers who do not come, because the avenues of access are cut off, and heavy freight cannot be shipped. The shelves of our wholesale dry goods Jobbers are groaning with goods, at extremely low prices, but the ready salesman hangs about listless and idle.—Our grocery, hardware, and drug dealers and numerous others, in every variety of trade, have hardly any thing to do but to sigh for rain!

How long is Pittsburg to remain in this dependent condition? A trade which is liable to such periodical interruptions can never be prosperous and certain. Country dealers will not establish their connections with a city which is liable to such inconveniences. Without certain and ample means of access, at all seasons, Pittsburgh must consent to take a very secondary rate in the list of Western cities.

Suppose we had now our Western road in operation to Wooster and Mansfield, what a contrast would our streets present. Every manufacturer, merchant, Jobber, and mechanic, would be busy.—Our dull streets would swarm with active life. Our languishing exchange would show a large congregation of smiling and bustling business men. We should find that we were not wholly dependent upon our rivers; but that our artificial streams, which no weather could effect, supplied to us all, or nearly all, that the natural stream lacked.

We venture the assertion—that Pittsburgh has lost more by the cholera on the rivers, and the subsequent low waters this season, than would have built the railroad to the State line.

If the manufacturers, the capitalists, the real estate owners, of this city, possess the sagacity for which they have the reputation, where their interest is concerned, they will take hold of this Western road, and have it finished as fast as money can construct it. They will not consent to wait for the slow moving of the negociation of Bonds, but by a liberal and universal subscription of stock, they will say to the Directors—*here is the money—let the road be finished by the Spring of* 1851!"

Pittsburgh has subscribed nothing, comparative with her means, as yet. She has subscribed more for this great object, than the county of Jefferson, in

Ohio, has for a like object, and they say they intend to run their subscription up to half a million.

We would beg leave to suggest to our business men, who daily assemble at the exchange rooms to mourn over the continued low water and the dull times, to take this subject under serious consideration, and see if some thing cannot be done to expedite the speedy construction of the Ohio and Pennsylvania railroad.

We are aware that the directors on the road are doing all that men can, and we have not the least doubt that the road will finally be built. But, hampered of money, the progress of the road will be necessarily slow. Is Pittsburgh willing to await this slow progress? She has undertaken this road—she has got to build it, and why not do it at once, as every day's delay is to her a positive injury.—*Pittsburgh Gazette.*

Railroad to the Pacific.

We cheerfully give place to the following note, and to the plan proposed by Mr Degrand, for a railway to the Pacific. Our want of room may compel us to omit the appendix for a future number.

This plan, emanating from a city more distinguished than any other in the Union for the extent and excellence of its railways, and sanctioned by men who, from their experience and successful management in railway affairs, are properly regarded as anthority in such matters, is certainly entitled to great consideration, and we feel that we are aiding this great work in giving their views to the public. Our aim has been to promote a full and free discussion of the subject, and we shall always be happy to lay before our readers anything that may lead to the adoption of the best plan for carrying out this great work.

To the Editor of the American Railroad Journal.

Boston, October 1, 1849.

Dear Sir:—With a view to enable your readers to form a deliberate judgment on the merits of the Boston Plan, would it not be well to publish, in your valuable Journal, the address and appendix, contained in the pamphlet sent you by this mail? You will observe by the proceedings, contained in this pamphlet, that at a public meeting, held in Boston April 19, 1849, the friends of a railroad to California have unanimously voted "That they deem this the only plan, as yet proposed, which can secure, promptly and certainly, and by a single act of legislation, the construction of a railroad to California, *in the shortest time* allowed, by its physical resources."

In regard to the suggestion, that it would be best to have a much larger amount of private capital paid in, by the company, we beg leave to remark that thus locking up a large amount of private means would of course obstruct it from the channels of active business, producing great distress and embarassment, at the very time when new channels of business task, to the utmost, the cash resources of active men. Now we remind you that the amount of prsvate means, invested in the Baltimore and Ohio railroad, came very near running that city—even though it was applied to a project, calculated to be highly beneficial in the end, to the prosperity of Baltimore?

A very large accession of active capital is needed to meet the new channels of business created by the acquisition of California. It is needed to build the railroads which will be converging from the different points of the Union, to the starting point on the Mississippi, of the San Francisco. Much of this new capital will, by the Boston Plan, be imported from abroad.

Yours, respectfully,

Wm. Ingalls,
E. H. Derby,
Robt. F. Fisk,
P. P. F. Degrand,
O. D. Ashley,
} Committee.

Railroad to San Francisco.

At a meeting of the friends of a railroad to California, convened by public notice in the newspapers, at the United States Hotel, on the evening of the 19th of April, 1849,

Dr. William Ingalls, was chosen Chairman.

Thomas R. Sewall, Secretary.

P. P. F. Degrand, after a few preliminary remarks, read "An Address to the People of the United States," setting forth the plan which he proposes, for the purpose of effecting the object in view.

Robert F. Fisk, after some pertinent and interesting remarks, proposed the following resolves:

Resolved, That this meeting approve the address presented by P. P. F. Degrand, and the plan therein set forth, for a railroad from St. Louis to San Francisco, deeming it the only plan. as yet proposed, which can secure, promptly and certainly, and by a single act of legislation, the construction of a railroad to California, in the shortest time allowed, by its physical obstacles.

Resolved, That a committee of seven be appointed to transmit this plan to the President of the United States, and to request him, (if he approve it,) to recommend its adoption to Congress.

Voted. That the following gentlemen constitute this committee:

William Ingalls,

E. H. Derby,	P. P. F. Degrand,
James C. Dunn,	Robt. F. Fisk,
S. S. Littlehale,	O. D. Ashley.

ADDRESS:

To the People of the United States.

Railroad from St. Louis to San Francisco.

Fellow Citizens:

I propose that a company (composed of men, in whose integrity and steadiness of purpose, confidence can be reposed, by the nation, be chartered by Congress, to construct a railroad from St. Louis to San Francisco, with a capital of 100 millions of dollars, and that this company (after having paid in $2,000,000,) shall have the right to borrow United States 6 per cent. stock to such an amount, (not exceeding $98,000,000) as may be sufficient to finish the road and carry it into full operation, with a double track.

I propose that Congress give to this company, a strip of the Public Lands, 10 miles wide, on the north side of the road, and the land for the bed of the road, and for depots, and the right to take, from the public lands, wood, gravel, stone, iron, and other materials necessary to construct the road.

The adoption of this plan will secure the completion of the road, in as brief space of time as may be permitted, by its physical obstacles:—and will secure this by a single act of Congress, free from the chance of future freaks of Legislation. This is the distinguishing feature of my plan—and it is free from the objection of absorbing the private resources of active men;—and free from the risk of halting, in this great work, at every step, for want of tangible means.

I propose that, immediately after the surveys are made, the company proceed to construct this railroad on the whole route, going to work, at once, on as many different parts as practicable; and building at difficult points, temporary railroads, to be used while the permanent railroad is constructing: and actually bringing into use the various portions of the road, as fast as completed.

The company being thus in possession of tangible means, and acting under a sense of the imperative necessity of giving to the public the facilites of railroad travelling as fast as practicable, will very soon reduce to a moderate distance, the inconveniences of a land journey to California, and will secure the completion of the entire line, in the briefest period practicable,—and in the interim, the mail stage and the traveller, by the land route, by following, as near as convenient, the track marked out for the railroad, will avail themselves more and more, every day, of the comfort and protection, naturally incident to the incipient stages of civilization, which accumulate on the line of a railroad, from the very moment it is begun, to the day of its completion.

I propose that, while the road is constructing, *a line of Telegraph be established*, as far and as fast as practicable, to transmit intelligence for the purposes of the road, and for the government, and for the public generally.

I propose that no stimulus, stronger than cold water, be allowed to be used, by the officers and men, employed by the road, or by the contractors. This rule has been found of inestimable value, in building and carrying on the New England railroads, in the construction of the Boston water works, and in the navigation of New England vessels.

I propose that, at points of any difficulty, two separate sets of men (relieving each other,) be employed, to secure the continuation of the work, *night and day*, and that, *at the most difficult points*, three separate parties of men (working, each of them 8 hours a day,) be employed, *to secure continual work, without interruption, either by meal-times or by night*, employing, in all cases, as many men, as can work to advantage, and having all sorts of work going on at the same time, for the purposes of the road, both on the route of the road, and elsewhere; so that there may be no delay, which can be avoided. This course was pursued, in bringing the waters of Cochituate Lake, into Boston, from a distance of 20 miles, through two summits and great physical obstacles:—and in the unprecedentedly short space or 2 years and 2 months, from the day the 1st spade struck the ground, to begin the work, the city and it citizens found themselves, in the full use of the water, flowing through a work, calculated to endure for ages.

The importance, in a pecuniary point of view, of using the road, *at an early day*, is shown by appendix B, by which it will be perceived, that the extra expense of travelling, between the United States and California, is estimated at $67,750,000 a year, over and above what it will be after the railroad is in use.

The arguments, in favor of the plan, are fully elucidated in the appendix. By moving for this plan, the friends of the measure will, by one single effort, viz., "the passing of the act,', secure the completion of the road, in the shortest possible time; whereas, if the adopt any plan, which relies on funds created by the sale of the land; or on a large amouut of funds from private individuals; or on funds to be, from time to time, appropriated by Congress,—they will impose upon themselves the never ceasing labor of Sisyphus, and by the delay waste enormous sums for the nation.

To secure the loan of the United States Stock, made to the company, and to secure the carrying forward, in good faith, of the contract made with the company, the United States may, if they desire it, take a mortgage of the road, and its appurtenances; take ⅓ of the stock; and appoint ⅓ of the directors, following the precedent so successfully practised, by the State of Massachusetts, in the case of the Boson and Albany road, (commonly called the Western railroad,) in which case, as in the contemplated charter, the railroad company do provide punctually for the payment of the interest on the public funds loaned to them, and also are to provide, and are providing, by a sinking fund, (and occasionally by extinguishment by purchase,) for the payment, at maturity, of the principal of the public loan.

The $98,000,000 of the United States 6 per cent., stock loaned to the company, being Coupon stock, payable, in London, will, (as have the Massachnssetts Sterling 5's, in the case of the Western road,) furnish, at any time of need, exchange on England, to be sent there, in lieu of our specie, and operate as additional capital, to be used by the citizens of the United States.

The $98,000,000 of the United States stock, loaned to the company (being made payable at the rate of $2,000,000 per annum, after 50 years,) will be paid off, by the company, with perfect ease, either by actual profits, or by the creation of new stock, to represent the amount paid off.

The other distinguishing feature of my plan is the creation, by a single act of legislation, of one hundred millions of dollars of American labor, by ordering, in the very charter, that the materials used in the construction of the road shall be exclusively of domestic origin. These one hundred millions of tangible money will naturally, directly or indirectly, be distributed to pay for the labor, the manufactures and the agricultural products of every State in the Union, and will set the whole industry of the whole country in motion.

The moment this railroad is made, it will be the great thoroughfare for the mail and for passengers, from Europe to the Pacific and to India. The saving of interest (by the saving of time) and the saving of insurance, for gold and silver and for valuable goods, will secure to the nation a great profit and a vast trade.

Whether we consider this railroad as an indissoluble bond of union between greatly distant parts of our widely extended empire; or as a means of averting European wars and wars with the Indian tribes; or as a means of transporting the mail and communicating telegraph intelligence; or as a measure of internal commerce, so vast, so varied, as to defy all precedent; or as a measure for national glory, obtained without waste of blood or treasure, by constructing and completing, in a brief space of time, the great work of the age,—we are irresistibly led to the conclusion, that national glory and national interest alike dictate the adoption, at the earliest day, of a measure calculated to obtain, for the present generation, the honor, which posterity will award to those who secure, for all future ages and by this single act of legislation, the immeasurable benefits flowing from the existence of this great work,

P. P. F. DEGRAND.

APPENDIX TO THE ADDRESS.

Railroad to San Francisco.

Remarks by P. P. F. Degrand, at Cohasset, at the opening of the South Shore railroad Jan. 1, 1849.

If we take into view the actual wealth created by the existence of a railroad, it will be found that the actual cost of a railroad is (as to the whole community) less than nothing. Take, for instance, the south shore railroad. The actual rise of land on its borders, caused by the existence of a railroad cannot be valued, on an average, at less than $50 an acre, for a strip, two miles wide, on each side of the railroad. A square mile contains six hundred and forty acres; which gives two thousand five hundred and sixty acres for every mile of the road, taking a strip two miles wide on each side of it.

The rise of $50 per acre on 2560 acres, gives an additional value to the land of $128,000 for every mile of the road. Each mile of the road, therefore, creates wealth to the amount of.....$128,000
While the road only costs, per mile..... 28,000

Whence it necessarily follows that it costs, in fact,.....$100,000 per mile less than nothing.

Is not the case demonstrated beyond all doubt and cavil? Will not, in fact, the land very soon rise, in some places, twenty cents per square foot, which makes $8,800 per acre.

This rise of the land, and of other property, real and personal, right and left of a railroad, accounts for the facility with which thousands of millions have, within the last twenty years, become tangible and have been spontaniously appropriated to make railroads of vast extent in all parts of the world.—The existence of a railroad not only creates the wealth which repays its own cost, but it also creates the means wherewith to build the next railroad.

This vast creation of wealth, by the existence of a railroad, will easily produce the cost of the railroad line in continuation of the South Shore railroad, (via Boston,) to St. Louis, in Missouri, or to some other point in the west, and thence to San Francisco, the centre of the gold region, and the future centre of the trade of the Pacific, and of India. Private enterprise, aided by donations, from Congress, of alternate sections of land, will do much to carry this line to S. Louis, in Missouri. But, farther on, the national arm should, in its might, push unhesitatingly the great work to completion in the shortest possible time. It should do it by the mighty lever of the public credit, thus leaving private resources to fill up the manifold channels of employment opened by our late vast accession to our already vast empire.

From St. Louis, in Missouri, to San Francisco, the distance is 1600 miles. At $66,666 per mile, fully equipped, the railroad will cost $100,000,000. Let a charter with this capital be granted by Congress, to a company, in which individuals take the stock and furnish $2,000,000 of the capital, obtaining from the United States the loan of United States stock for the balance. Let this company be bound to carry the mail and to carry the troops and munitions of war, on very reasonable terms; and let Congress also grant them, through the public lands, a strip ten miles wide, on the north side of the road and let the company be bound to build the road with American iron and other materials exclusively of domestic origin.

Let us now consider what will be the consequences of such a plan :—

Thus fortified, with tangible means, the road will be built in five years. When built, its very existence will defend our possessions on the Pacific.—It will avert all danger of Indian wars, north and south of its line. Upon its bed, a telegraphic wire will enable the government to issue its orders to California and to Oregon, with the rapidity of lightning—and will transmit individual correspondence with the same electric speed.

In case of a declaration of war against the United States by a European power, the instantaneous transmission of the news and of the implements of war, including even seamen, to our possessions on the Pacific Coast, will give us the command of the trade of our own enemy in the Indian Seas, and enable us protect our own.

The cost of this railroad will be more than repaid by the additional value wrich it will impart to the public lands west of Missouri.

Employing iron and other materials, exclusively American, will give life and animation at once to a great mass of industry, now lying dormant.

The plan now proposed, will finish the road, in a short space of five years, because the money will be easily obtained, by the sale of United States Stocks.

Another plan, which is before the public, contemplates to create the money by the sale of the land.—But by following that plan, the land cannot be sold, until after the road is built, and the money to build the road, cannot be tangible, until the land is sold.—The plan is therefore radically defective. If it be adopted and adhered to, 50 years will not suffice to bring the road to completion.

And what is 50 years, as to the accumulation of interest, while the road is in construction? It is an increase of its cost more than four fold. And what is 50 years, in the onward march of this mighty nation? It is, (judging from the past,) the increase of its population, from 22 millions, its present number, to the prodigious nnmber of 88 millions. And what is 50 years, in the existence of most of us? Alas! it is the passing to the grave of more than two generations.

As to the constitutional power of Congress, thus to loan the public credit, to the amount of 893,000,000, there cannot, in this case, be a shadow of doubt; because this loan is made, in pursuance to the clearly defined powers of Congress, viz. :—

To provide for the national defence :

To provide for the transportation of the mail, (which will be done, both on the land and by lightning:)

To take provident care of the public domain, by increasing its value, by the best known modes of internal communication :

To cement the bonds of union, between parts of this vast empire, which will be thus riveted together, by unceasing intercourse.

Mr. President :—I perceive that you are already convinced, and that you go with me and with my intelligent fellow citizens around me, for a railroad to San-Francisco, and for a railroad to be used before most of us shall have departed for another world. Let us then resolve that it shall forthwith be done, and it is done; and let us say :

The south shore railroad—its extension, *via* Boston, in the shortest time possible, to San Francisco, by the mighty lever of the national credit.

For reasons given in our last number, we cannot subscribe to the scheme of Mr. Degrand. In the outset he begs the very question upon which his whole plan rests, viz: the selection of "a company composed of men in whose integrity and steadfastness of purpose confidence can be reposed by the nation."—Where shall these men be found, by what authority shall they be appointed, and what security shall we have that the work shall always remain in such hands? Who is to be a judge of qualifications? A New Englander would say that it should be entrusted to men from this section of the country, for the reason that New Englanders have displayed more "steadfastness of purpose," and more ability in railway affairs than can be found in any other part of the country. The south would not trust the management of the road to the "scheming Yankee."—It would claim that its leading men alone presented the qualifications which are the necessary conditions prescribed. The west would say, "this is a work which belongs to us; you of the Atlantic States have always been the recipients of government patronage. It is but just that we should have appropriations of the money to be expended among ourselves." A squabble would at once ensue for the management of this great work, and the amount of money which this plan proposes to place as a stake, to be carried off by the successful party in the struggle, would of necessity lead to every species of political corruption and bargaining to secure so vast a prize, which, of itself, would preclude the selection of the men of the character contemplated by the plan. Again, the plan supposes the existence of a power competent to decide upon this point of qualification and certain to appoint none but the proper men. From this we dissent altogether. Each administration would appoint its own partisans as ditorrecs, who would exert all the influence that their position, and the immense means at their command would give them to sustain in power those on whom their offices depended. Our only safety consists in completely dissevering the "purse from the sword," the money holding from executive power.

As by the plan proposed, the road is to be a private enterprise, goverment should receive every security for its aid to this, as to any other private work. The $2,000,000 advanced by the company would be only security for an equal sum advanced by government, and the inconvenience that would be felt from withdrawing a large amount of money from the business of the country, should have no effect in setting aside so important a rule in all business affairs.—Again, if the road is to realise one-half of what is predicted of it, if over it is to pass the commerce of the world, it should never be made the subject of private management, anymore than shonld the navigation of the Mississippi. The rights of all our citizens, and the commerce of the world, should never be surrendered to the management of individuals who might have no other principle of action than their own cupidity, and whose interest would come in direct conflict with that of the public. Again, individuals could give us no security for the proper construction of the work; so that, after all, the aid that goverment might render, it might be entirely unfit for the office it will be called upon to perform.

The Coal Trade for 1849.

The quantity sent by Railroad, this week, is 25,777,17—by Canal, 15,957 05—for the week, 42,725 02, tons, although the shipping season is rapidly drawing to a close.

The trade continues about as dull as usual, and there is but little hope of any favorable change for the balance of the season, or even while the present tariff law is in force. The Warehouses, which our Government in their liberality to foster and encourage foreign importations, provided under the Tariff of 1846, are filled to overflowing with foreign Iron &c., sufficient to supply all the wants of the country. Under such circumstances how can we expect any improvement in the Coal Trade?

Freight to New York has advanced to $1 75 per ton, from Port Carbon—$1 70 is paid from Schuylkill Haven—to Philadelphia there is no change.—*Miners Journal.*

☞The Regular Trains on the Atlantic and St Lawrence Railroad, have commenced running to what is usually called the Widow Merrill's, in Paris—being about two miles short of the Depot at Paris Cape. Between the Widow Merrill's and Paris Cape there is an important Bridge in the course of construction, across the Little Androscoggin. That bridge will be completed in the course of the

fall—after which the trains will run to Paris Cape A corps of Engineers is now in the field, making a final location of the Road, between Paris Cape and the Androscoggin at Bethel, under the new agreement with Messrs. Black & Wood, in concert with the Canadian Company.—*Argus.*

Two Trains Daily, between Alabama and Boston, and New York and Boston.—We learn (says the Boston Atlas) from Mr. Twitchell, the Superintendant of the Worcester Railroad, that on and after the 8th of next month, there will be run over the Boston and Worcester and Westren Railrad, two through trains daily, (Sundays excepted,) from Albany, leaving that city at 8 A. M. and 3 P. M. and arriving in Boston at 6 and 11½ P. M. Trains will also leave New York at the same hours as Albany, and arrive at Bostok at the same time.

New York.

Harlem Railroad.—The arrangement in regard to the extention of the Harlem Railroad from Dover Plains to Chatham Four-Corners, where it will connect with the Albany Road, is substantially as follows: Three heavy capitalists proposed to build the new road for $2,300,000, the company paying the engineering expenses and right of way, estimated at about $80,000. The road is to make payment in 7 per cent. bonds based on the new road only, and the earnings of the new road are to be depended upon for the payment of the interest on their bonds. The old road, of course, is to pay the new road a fair compensation for the business brought it by the new road.

Crawfordsville and Lafayette Railroad.

A correspondent of the Lafayette Daily Journal writes that "this road is progressing with the speed of a Locomotive. There is a continued string of workmen for seventeen miles on this end of the line. Immediately on this side of Crawfordsville, the number of shanties indicated a host of workmen in that vicinity. One half of the road will be ready for grading by the first of December next. This enterprise—the energy with which it is progressing, speaks well for the citizens of Crawfordsville. The scheme, put in operation since last winter, and in less than one year over half of the road almost ready for the wood structure, and that too, by money raised at home, is a thing unparalleled in Hoosier enterprise.

The able and efficient President, Major Elston, knows what *can* be done, and is exerting himself nobly in its behalf, as much so as though it were an individual concern. They have only paid, as yet three dollars on a share; —another assessment takes place ina few days."

Georgia.

The Burke County Railroad.—We learn that F. P. Halcomb, Esq., chief engineer on the South Western Railroad, is at present engaged with a corps of engineers, in making examination on a route for the Burke County Road, between Augusta and Waynesboro'. This examination is being made through a section of country in a more direct line between the two places, and farther from Savannah river than the former proposed route. The route from Waynesborough, has been heretofore well examined, to the Central road. There is no longer doubt of the speedy commencement and completion of the road. The subscriptions, we learn, are constantly increasing.—*Georgian.*

Georgia Power Loom Manufactory.—Messrs. Poe & Co., of Augusta, have completed a contract for the construction of a brick building, on the Canal in Augusta, 100 feet long, 50 feet wide, and three stories high. The Company have paid a cash capital of $25,000, which is furnished by some of the wealthiest citizens in the place, and which can readily be increased to any given amount required. It is to be employed in the manufactory of power looms, and of every other species of machinery used in cotton and woolen mills. Mr. Poe is himself an humble mechanic, and judging from the specimens of his skill exhibited at the late fair, he will be enabled to turn out as fine machinery as can be produced in the northern shops.—*Macon Jour. & Mess.*

Railroads in Cuba.—On the 10th ult. a new line of railroad from Navajas, connecting with the Havana and Cardenas road, was opened for the accomodation of the public. The railroads on the island of Cuba are the only ones in the Spanish dominions

Cleveland and Columbus Railroad.

The work upon the railroad from Columbus to Cleveland is progressing rapidly. The contractors, Messrs. Harback and Co., have over 3,000 men employed, at a monthly expenditure of between $50 and $60,000. It will be one of the best roads in the union; the aggregate amount of *curves* on the whole 135 miles is less than *five miles*, and the maximum grade only 15 feet per mile, excepting at its approach to the Lake. The track of the first 35 miles, from this city, is now being laid with 63 lb. T rail, and will be opened by New Years to Wellington; from this point a line of stages will be run to Bellevue, connecting with the Sandusky and Cincinnati railroad, which will avoid any night travel between Cleveland and Cincinnati or Columbus, in coaches. The balance of the road to Columbus will be finished within one year. Passengers will then be able (if the stage connections between this and Columbus can be made to suit,) to travel from Chillicothe to New York city, in 48 hours.

A railroad is also projected from Sandusky city to Cleveland, and a company from Cleveland to Buffalo is already organized. When these works are completed, and our road to Newark, there will be a continuous line of railroad from Chillicothe to the city of New York. The construction of the Scioto and Hocking Valley railroad will secure this, and whether it shall be constructed or not, will depend in a great degree upon the vote of Ross county on Tuesday next. The Scioto and Hocking Valley railroad will connect with all the railroads now in course of construction in Ohio, and will enable the citizens of Chillicothe and Ross county, to enjoy all the advantages to be derived from railroads, at a less expense, and in less time than any other road which is projected.—*Scioto Gazette.*

AMERICAN RAILROAD JOURNAL.

Saturday, October 6, 1849.

Memoranda for the Conventions.

The Pacific railroad is a subject of world-wide importance: it addresses itself to the consumer of 'occidental' merchandise in Calcutta, Canton; to the consumer of 'oriental' merchandise in Berlin, Bristol, and Boston. This measure, carrying out the very idea that brought the great Columbus to this 'brave world,' will open to mankind the long sought for western route to the *terra incognita* of dearth and diamonds. This is above all an American measure, one for building up cities on the silent shores of the Pacific; for growing corn on the untrodden slopes of the Rocky Mountains—in short an inspiration of an overruling Providence for shaping out and quickening the destinies of this great Anglo-Saxon Republic.

The Pacific railroad is a great question; yet men of narrow souls will huxter it as though it were a transaction of penny-tape. It is a subject of wide, of national interest, one of universal benevolence; and yet political drabs, making it the stalking-horse of a shabby selfishness, will degrade it to the uses of place-hunting finesse. Gloomy men standing in stolid cowardice on the borders of the prairies, lag behind the idea; ardent men rush before it, throwing in their hot haste but a passing glance at the snow-capped peaks of the Rocky Mountains.—The railroad to the Pacific is an inevitable, an immediate necessity: the discussion of such a question demands a sober, vigorous judgment, a patriotism at once broad, honest, generous. How far will the coming convention meet 'these conditions?'—How, for instance, will those meetings deport themselves on the the question, which are to be the termini? Fie on them if this be the program; the political tricksters will say out their say as noisily as penny-showmen; all the *mile-square* patriotism from north to south will prick up its ears; and perhaps the mountabank mouthings of one, or the currish barkings of the other, will out—sound the many inspirations of common honesty and common sense. But happily the question of route is a plain question of equity.

The two competing points on the Pacific Ocean are San Francisco and Puget's Sound. San Francisco has acquired an importance which, though possibly ephemeral, cannot be overlooked in consideration of things beyond the Rocky Mountains; but while public opinion just now points to that place solley, the people should not forget that all information on the subject associates genial climate, generous soil, industrial resource, and all other conditions of commercial greatness, with that magnificent estuary, Puget's Sound.

The South Pass in latitude 42½°, the North Pass in latitude 48°, the Pass Del Norte, in latitude 32 are the points named for crossing the summit between the two oceans. The air line—the one of a great circle—between New Orleans and San Francisco—*the extreme points of southern interests on both shores*, intersects the Rocky Mountains at the 37° of latitude, five degrees north of the Passe Del Norte; and as the air line between Boston and Puget's Sound, *the extreme points of northern interests on both shores*—intersects the Rocky Mountains at the 48°, 11 still more northerly; it is concluded that the Pass Del Norte, in the strict equity of the case, can have no claim whatever. So much for the Pass Del Norte. Again: Although the air-line between Boston and Puget's Sound crosses the dividing ridge in the latitude of the North Pass, yet the air line between San Francisco and New Orleans intersects this ridge 11° more southerly, plain fair dealing places the North Pass also out of the question. The South Pass then is the gate of intercourse between the valley of the Sacramento and that of the Mississippi. But further: the air line between Boston and Puget's Sound on the north crosses the Rocky Mountains at the 48° of latitude, that between New Orleans and San Francisco on the south at the 37° of latitude; and the mean between these two extremes being 42½° the latitude of the South Pass, it follows that the south pass is the point of mutual accommodation. Besides: the South Pass forms an isoceles triangle with San Francisco and Puget's S. and holding, therefore, the same position in reference to either, it is concluded that the South Pass is the point of mutual accommodations for the extreme points of the Pacific interests. Finally: the air line between Boston and San Francisco, intersecting the Rocky Mountains at about 42½° the latitude of the South Pass; and the air line from New Orleans to Puget's Sound, intersecting these mountains at the samepoint it follows that it is the point mutual accommodation for all sections of the country, whether east or west of the Rocky Mountains.

The western terminus is another *vexata questio* in the hands of stunted patriotism or thimble-rigging statesmanship; but happily this too may be decided by reference to the plainest principles of fair dealing. The line bisecting any angle of the triangle A B C shows the average direction between the two adjacent sides; and the intersecting points of the three lines besecting the three angles is therefore the central point for A. B. & C. Now in the triangle Boston, New Orleans and Puget's Sound, the line running midwaysbetween each pair of sides willpass through St. Louis; in the triangle San Francisco Boston and New Orleans, the line running midways between each pair of sides will pass through

St. Louis: in the triangle Boston, New Orleans, and South Pass, the latter being already a fixed point on the route, the line running midways between each pair of sides will pass thro' St. Louis: and therefore it follows that St. Louis, as the mean between all the extremes of which the question admits, is the point fixed by the abstract conditions of the case for the eastern terminus of the Pacific railroad.

The eastern terminus and the crossing of the Rocky Mountains are deduced here from unquestionable abstract premises, and utterly irrespective of physical considerations. The only topographical fact in fixing these theoritical points is simply that of practicability as a crossing of the South Pass. I go no further into the question of route;—it is either an impudent or a cunning pretence in the present state of our knowledge of the country to assign a more detailed location. The public are therefore advised earnestly of the uselessness of debating this question—a question on which the sum total of our *precise* information is simply nothing. Men of good sense in all sections of the Union will understand readily that with barely sufficient facts to establish conditionally but two points on the line, all that can be done at the present moment is, to lay down from these a theoritical basis for an engineering exploration. This Journal in its honest anxiety for the success of the Pacific railroad lays great emphasis on this fact. The unanimous will of the whole people is necessary to carry out a work of such magnificence; and therefore do we urge earnestly that, while all discussions on the question of route must be carried on in ignorance of the facts, they can have only the effect, by exciting dissension and ill-feeling, of defeating this master-stroke of progress—a measure requiring above all others harmony and good will. One of the great merits in the plan put forward in this Journal for carrying out the railway to the Pacific, is that this question of route is not allowed to interfere until the machinery is in *bona fide* existence; and that while saving the measure from the certainty of sectional opposition, it places the decision of the case in the hands of a body representing exactly the various interests concerned. M.B.H.

Railroad Accident.

We learn from the Lewiston Falls Journal of yesterday, that the up train of cars on Thursday afternoon, from the junction to Winthrop, ran off the track two miles above this place, at Barker's Mills, in consequence of the gross carelessness of the individual (Mr. Joseph Read, we believe,) having charge of the switch at that place, completely capsizing the engine and doing much damage to the tender and and baggage car of the train. Fortunately, none of the passengers, of whom there about fifty, were severely injured, and the escape of the engineer and fireman was truly miraculous.

The accident, and all the loss occasioned by it, might have been prevented by the use of Tyler's Patent Safety Switch, which render such accidents almost impossible.

Railway Connection between Montreal and Quebec.

It will be seen from the following communication, that the Canadians are agitating the subject of connecting Quebec with the St. Lawrence and Atlantic road, and consequently with the railways of New England and of New York. This is a task requiring so little effort, that we have strong expectations of seeing this work accomplished, as soon at least as the St. Lawrence and Atlantic road is completed.

To the Editor Quebec Morning Chronicle:

Sir,—Feeling an interest in all that concerns the progress of Quebec, I cannot refrain from bringing before the notice of your readers a project which, in my humble opinion, is more calculated than many other things to advance the interests of your city, as well as the interests of the surrounding country.—*I refer to the construction of a railroad at Point Levi to Melbourne, to connect with the St. Lawrence and Atlantic railroad.* The latter road is contracted to be delivered, *in three years* from this month, complete and ready for business, with titles for land, &c., through to Portland, for the sum of £6,550 per mile—locating, laying out, &c., being subject to the control and approval of the company's engineers. By the time that the St. Lawrence and Atlantic railroad will be finished, it will be tapped by the Pasumpsic and by other roads, so that by its construction *Quebec would be connected with Portland, Boston and New-York.* By the construction of a railroad from Quebec, the townships would be opened up, the immense tracts of fine land through which it would pass, would soon be filled with industrious farmers, and their produce would reach your markets, to be exchanged for merchandise, &c. It would be difficult to estimate the advantages which this work would effect, and nothing short of the absolute impossibility to construct it, should deter those interested in the growth and prosperity of your city from immediately taking measures to secure its completion. Nor is this a matter impossible. The directors of the St. Lawrence and Atlantic road pay for their 97 miles from St. Hyacinthe to the province line as follows:

Montreal City Bonds at par	$500,000
25 per cent. of the capital stock at par,	
remainder one half the cost of the road from Montreal in stock guaranteed by the province at 6 per cent. interest. Now, as the length of the road from Point Levi to Melbourne would be about 80 miles, the cost, at the rate of £6,550 per mile would be $2,096,000. Is it too much then for Quebec to take $200,000 of stock? if not, the road might be built thus:—	
Contractors 25 per cent. of the stock at par	$524,000
Cash	200,000
Quebec City Bonds at par	324,000
Stock for half the road guaranteed by the province at 6 per cent. interest, for	$1,048,000
	$2,096,000

I have no doubt the contractors for the St Lawrence and Atlantic railroad would also agree to finish and complete the proposed road on the same terms and within the same period. There can be no question of the advantages which would result therefrom, but it is questionable, if the apathy, for which your good citizens have become rather celebrated, will allow of your making the effort.

A. Merchant.

Montreal, 17th, Sept. 1849.

We are surprised that the editor of the Railroad Journal does object to Mr. Whitney's plan because he has not proposed to guarantee, or give 'sufficient security,' that he will live to see the work completed; and we ask, what would be an adequate security! We certainly cannot understand what the Railroad Journal editor wants, or his meaning by "no security." Does he mean to say that Mr. Whitney should give security that the wilderness lands, which he proposes to buy, shall furnish the necessary means to build the road? or does he mean to say that Mr. W. does not propose ample security that he will apply the present value of the lands to the construction of the road? Mr. Whitney proposes to build in advance of selling any lands; we think this full safe security.—*Pathfinder.*

We will explain our meaning. In matters of business, contracting parties, no matter how high their motives or honorable their character, must be bound strictly to the precise intentions of the contract. Without intending any reflection whatever on the personal honor of Mr. Whitney, we must insist that his bill as it stands is a loose, one-sided unbusiness-like bargain. Take any of the provisions of the bill—take for instance the very provision selected in the above quotation as furnishing 'full safe security' for the people viz: "That Mr. Whitney proposes to build in advance of selling any lands." Now does not this 'full safe security,' as it is termed with some *naivety*, admit for instance that Mr. Whitney after having built ten miles from Puget's Sound, shall appropriate lands five miles deep with a frontage on the sound of 60 miles. This land must as sure as the Sun is in Heaven, be the site at no distant day of perhaps the greatest city in the world, and therefore while every subsequent ten miles must be made under an *increase of cost* and a *decrease of profit*, Mr. Whitney will see at once, that while at perfect liberty to do so his personal interest is to stop with this magnificent acquisition of a city-site on the shores of unquestionably the finest estuary in the world.—Where then is this 'safe full security?' With great respect for Mr. Whitney's honor, we repeat that in his proposed contract with the people *there is no security* on his part, seeing that in even the very particulars paraded by his supporters we can point out so clearly an instance in which his bill gives him at once a perfect license, and we had almost said an inevitable temptation to default.

To the Editor of the American Railroad Journal

Lonaconing, Maryland, Oct. 3 1849.

Sir:—I read with more than ordinary interest the valuable communications which appear in your excellent Journal on the "*Iron Ores and Iron Manufacture of the United States.*" Having observed that the writer of these articles notices the patented improvements adopted by some of the furnaces described, I beg to call your attention and that of the iron trade generally to the fact that the improvement frequently mentioned in the description of furnaces under consideration—of using the waste gases either for heating the blast or generating steam, is the invention of Mr. Faber—and was patented by me as his assignee, in 1842.

Many establishments purchased licenses from me when I first introduced that improvement in this country, and have had it in constant succesful operation. But as my time and attention has been entirely engrossed by my works here during the past four years, a great number of furnaces have adopted said improvement without obtaining licenses from me, and probably unaware of the existence of my patent.

I shall be obliged to you, therefore, if you will call the attention of your able correspondent H., and the iron masters generally to this subject. At my earliest leisure moment I will prepare an abstract of the patent in question to be published in connection with an advertisement for the columns of your Journal.

Very respectfully,
Your ob't. serv't,
C. E. Detmold.

Maine.

York and Cumberland Railroad.

We have been favored with a copy of a report recently made to the directors of this company, by A. C. Morton, Esq., Consulting Engineer. This company is now making a renewed effort to obtain the necessary means to complete this work, or at least that portion of it between Portland and Saco, a distance of about 20 miles, and the above report was prepared for the purpose of putting the public in possession of all facts proper to be known before subscribing to its stock. The route, its physical characteristics, cost of road, capacity of the country through which it proposes to traverse, to give it a profitable business, etc. The report is illustrated by a map of the route of the proposed road, showing its connections with other roads, which we present to our readers with the present number of the Journal.

The report is a model of its kind, and presents the evidence touching the probable business of the road in so distinct a manner, that its perusal cannot fail to convince every person who examines it, what he has

a right to expect from this source. The country ou the line of the road is as densely populated as any agaricultural section in New England, and will compare favorably with any other in its agricultural resources. The water power upon its line is much greater and more available than upon any line of equal extent of which we have any knowledge. Its prospective connections will be better illustrated by the map, than by any description.

Th city of Portland is very deeply interested in the success of this work. The size of Boston naturally attracts to it the trade of all New England, and Portland can retain the trade of that part of Maine west of the latter city only by giving to it the facilities of a railway communication with itself. The question for the inhabitants of Portland to consider is, not so much what will be the value of the stock in this road, as how much it will tend to increase their business and the value of their property. In this view we think that they can much better afford to lose what may be necessary to complete the road, than to fail to secure it, now that is within their grasp. We presume that this view of the case has been thoroughly considered by them, and we have no doubt but that action in this matter will accord with their interest.

In speaking of the route and the business prospects of the road Mr. Morton says—

The design of your road as before stated, is to connect with the Boston and Maine road, and thus give an interior communication between Portland and Boston and the intermediate towns, furnishing a cheap and expeditious conveyance to market, for the trade of that section of the country through which it passes, while it will open a new and picturesque route for through travel.

Taking up the question of its local advantages for business I would remark that soon after reaching the flourishing village of Saccarappa, your road will have a very considerable income.

Here the Presumpscot river has a fall of 32 feet, and the water power caused thereby is adequate to operate 100,000 spindles, and at Congin, one mile below Saccarappa, and within a slight distance of the line of your road, there is a fall of 17 feet.—Within 6 miles of the city of Portland, you bring into immediate use an extent of water power as great as that now in use at Saco and Biddeford.

It appears a matter of surprise that so great and valuable a water power, so convenient to tide water as this, should remain till this time comparatively unused. There is no other Atlantic city in the United States, (unless perhaps we except Baltimore) that boasts of such unrivalled advantages for manufacturing industry in its immediate vicinity, as the city of Portland.

The Presumscot river is discharged from Sebago Lake 17 miles from Portland. The latter is elevated 260 feet above tide water, and covers a surface of 100 square miles. Between this lake and the sea, there are no less than 15 distinct falls, varying from 10 to 32 feet each, having an aggregate of 228 feet. All of these falls are capable of being made valuable for manufacturing purposes, and it is not asserting too much, to say that a continuous manufacturing village will eventually extend from where your railway reaches the Presumpscot, to the outlet of Sebago Lake. There is an even and uniform flow of water in the Presumpscot, from the capacity of its great natural reservoir, Lake Sebago, that insures against the damages of sudden floods, or the evils arising from severe drought in the summer.—In this respect, it has capacity and advantages beyond most streams in New England, at present in use, and from the proximity of its water falls, to a large seaport, may claim to possess advantages no where surpassed.

The only surprise is, considering the density of population upon the line, the wealth of the inhabitants, and its favorable location for business, that it has not before been brought into greater notice by means of a railway.

To see a Lowell, or a Manchester, within six miles of Portland, at an early day, it needs only the prevalence of the same spirit of enterprise, and the same forecast that has given to the other manufacturing towns of of New England their importance.

At Saccarappa there are at present in operation 3 cotton mills, have 8700 spindles and employing 350 persons There is also 1 power loom harness factory—1 flouring mill—2 shingle and lath mills—2 machine shops—1 lock shop—1 iron foundry—4 saw mills, and various other kind of machinery. There are also 18 stores.

Within the limits of the free grammar school district which extends one mile in each direction from the bridge, there are 2000 inhabitants. It is estimated by intelligent timber merchnnts that the saw mills manufacture 8.000,000 of feet of lumber annually. There are nine lines of stages running through this place, and an omnibus running twice daily to Portland.

At Congin, there are 2 paper mills—1 veneering mill and one store.

The present amount of freight from these places is over 15,0 0 tons annually.

Above Saccarappa there are in use several valuable water powers operating 20 saws—1 cotton factory and other machinery.

The next important point on the line is Gorham, a rich agricultural town, having a population of over 3000 inhabitanrs, and containing 12 stores—1 academy, and 1 female seminary.

From this place to Sebago lake, the distance is about seven miles, and the construction of a branch from your road to this point, will connect with a steamboat navigation of 30 miles, in extent, thereby securing the travel of this favorite route to the White Mountains, and the trade of the surrounding towns. There are at the present time, 6 stage coaches passing daily through this place.

Your road reaches the Saco river in the town of Buxton, which with the town of Hollis on the opposite side of the river, will furnish for the road a large amount of trade. Bar mills are situated about half a mile below the road, where the river has a fall of 20 feet.

At Salmon Falls, about 1 mile below Bar Mills, there is a fall of 30 feet at one point, and an additional fall in a distance of half a mile of probably 30 or 40 feet, the former being improved to some extent. When it is known that the amount of water flowing into the Saco river at these places is very nearly equal to the same stream at Saco, where with a fall of 38 feet it now drives about 100,000 spindles and a large amount of other machinery, some idea may be formed of the value of the water power at the places above mentioned.

Within the limits of these two towns, there are 23 stores, 30 saw mills, 5 grist mills, 1 cotton 1 woolen factory, 4 lath and 2 planeing mills, and a considerable amount of other machinery. The amount of lumber annually manufactured exceeds 20 millions of feet, and there is an extensive business carried on in the manufacture of shingles, Pails, Tubs, Sugar Boxes, Heading, etc.

The value of the articles manufactured being mostly prodncts of the forests, exceeds $400,000 annually. It will also be observed by reference to the preceeding tabular statement, that the agricultural products and the number of neat cattle and other animals in these towns are large, and compare favorably with other towns in the county of York.—In the town of Hollis there are extensive quarries of granite of great beauty and value for building purposes, and large quantities will undoubtedly be transported to market when a cheap conveyance is furnished. It is estimated by intelligent business men, that the total amount of freight which will be furnished by these two towns, with the present trade, will exceed 16,000 tons annually.

The Saco river has its principal source in the notch of the White Mountains, and flowing in a southeasterly direction, its volume is increased in the distance of a few miles by its mountain tributaries to that of a large and powerful stream, In its whole length it receives the drainage of a section of country of 650 square miles in extent. After it emerges from the highland district it runs for a distance of 60 miles through a rich agricultural country opening a beautiful and fertile valley through which a large trade flows.

The aggregate amount of fall available for manufacturing purposes at various places, within a distance of 21 miles above the point where your line crosses it, exceeds 200 feet.

It furnishes a highly favorable route for a branch to your road, the construction of which would further develope the capabilities of the country by bringing into use the whole of its valuable water power, and building up manufacturing town along its banks. The day is probably not far distant when this branch will be extended up the valley of the Saco in a direct line towards the White Mountains, as far as Conway, New Hampshire, where it will meet a line already surveyed from Meredith to the same point, thus connecting your road by another attractive route with the roads of New Hampshire and Vermont.

The towns bordering the Saco and Ossipee rivers, which are tributary to your road, possess great natural resources and at the present time furnish a large and valuable trade. But when your road shall have been opened, it will like all similar works, materially increase the value of lands and the amount of trade, for the reason that it will give to the agriculturalists of this comparatively secluded district, nearly the same facilities of reaching the market, as those more favored towns in the immediate vicinity. It will call into existence new branches of trade, by furnishing a cheap and rapid means of transportaion for heavy and bulky articles which at present are comparatively shut out of market from the great expense of conveyance. The effect of railways is to equalize trade, and the value of commodities in different sections of the country; to reduce the cost of articles drawn from the cities of the seaboard by remote towns and increase the value of the products of the interior by lessening the cost of their delivery in market.

After crossing the Saco river, your road will pass through an agricultural country for the whole distance. On reaching Alfred, the shire town of York county, you are in the midst of an exceedingly fertile and populous district. It is from this point that I would propose a branch line, to which allusion will hereafter be made; extending westerly to Winnipiseogee Lake.

The superiority of Portland, as a market, over any town east of Boston, for York county and the whole region to the north of your line both in Maine and New Hampshire, will with this branch line, secure to your road nearly the whole of this valuable trade. In Berwick, at Salmon Falls, the point where your road unites with the Boston and Maine road, and in Somersworth on the opposite side of the river, are several cotton mills, having at present 37,000 spindles, and a capital of over one million of dollars.—At Great Falls, a short distance above, there are extensive manufacturing establishments, where there are 60,000 spindles in operation.

The large population and extensive manufacturing interests at, and in the immediate vicinity of the western terminus of your road will naturally add much to the intercourse with the interior, and doubtless contribute largely to your business.

It is unnecessary to pursue the object of the local trade of your line, further than briefly to allude to some of the leading articles which will constitute the bulk of its freight business.

Among the various advantages which indicate the great superiority of your road, the principal consideration is the fact, that for nearly its whole extent, the country is thickly populated, the soil fertile and in a high state of cultivation.

The surplus productions of agriculturalists must therefore compose a very considerable portion of the tonnage of the road. Large quantities of pressed hay, grain, beef, potatoes, cattle sheep, etc., will be forwarded to market by this conveyance.

Allusion has been made in another part of this report, to a proposed branch line to your road, which in its influence, upon your trade and the value of your stock, is scarcely second to your advantages at either terminus. This is a connection with the roads of New Hampshire and Vermont, running westerly to Lake Champlain and northwesterly to the Canada line.

The most natural point of divergence from your line to form this connection appears to be in the town of Alfred, a distance of about 33 miles from Portland and running as nearly in a westerly direction as the ground will permit, to the south end of Winnipiseogee Lake in the town of Alton, thence along its southwestern shore to Gilford, when it would bear more westerly and probably intersect the Boston, Concord and Montreal railroad near Meredith.

From this point, looking to a still more westerly connection, the above mentioned road would probably be followed for a number of miles to a point in

the town of Northfield, where a branch could be constructed, connecting that with the northern road at a point in the vicinity of the village of Franklin.—This would perfect a direct westerly line of railways from Portland to Burlington on Lake Champlain.

This must be regarded as an important connection and one which not only brings Lake Champlain nearer to Portland than Boston, but also the upper Connecticut and Passumpsic valleys, through the Boston, Concord and Montreal road to Haverhill.

The project of a road from Montpelier, Vermont, to the Connecticut at Wells river village or Bradford, has been much discussed. Should this be constructed, uniting with the Boston, Concord and Montreal road at or in the vicinity of Haverhill, by constructing the other link from the last mentioned road at Winnepiseogee Lake to your road in Alfred, another and more direct line of railway communication from Portland to Lake Champlain at Burlington, would be completed.

This materially reduces the distance below that by the way of the northern and central road to Montpelier as above described, and as it strikes the Connecticut valley at a point from 30 to 40 miles above any other road leading from Lake Champlain to the seaboard, it enjoys unusual advantages. It not only presents a much shorter route for the western trade, but its manifest tendency is to interrupt the trade of the upper Connecticul and Passnmpsic vallies, turning it into a new and more direct channel to an Atlantic market. Your road would then constitute the last and most important link of this great chain over which the accumulated trade of several of the richest districts of New England could reach the seaboard. With this view of the question, it appears a proper subject of investigation as showing the favorable position and advantages of your line for the western trade, and involving considerations of much interest to every friend and stockholder of the road.

For a more perfect illustration of the advantages of this route, its relative position to the country it is designed to accommodate, and to other channels of trade, I refer to the map accompanying this report.

The beneficial effects of railroads on the value of lands, is a subject with which all are familiar and to which I need not hardly here allude. These benefits are not confined to the immediate vicinity of railroads but extend to large districts of country, considerably remote from the line, where the increased value thus given to lands often far exceeds the cost of the roads.

In the State of Massachusets, the immense increase in the value of real estate, has resulted mainly from the introduction of railroads, and equally favorable results have followed their construction in other parts of the country. The increased valuation of real and personal estate in the city of Boston only, from 1841 to 1848, most of which may be ascribed to the effects of her railways, was about 60 millions of dollars, or more than the cost of all the roads in the State.

To the city of Portland, your road will bring advantages far beyond what most of its friends can estimate at this time, not only securing the rich trade of the western part of the State, now in danger of being drawn from us by competing lines, but opening to her a new and favorable route to other States, competing successfully with the most fortunate lines to Boston from the Connecticut valley and Lake, Champlin. From her real estate and business men and in fact, from all classes of her citizens, your road should receive a hearty and liberal support.

Railways have been the great agency that has given to New England her present commercial and politicle importance. Boston and Massachusetts have given examples in this respect which are worthy of imitation. But we need not go beyond the limits of our State for proof of prosperity clearly attributable to the influence of railroads. The most casual observer cannot fail to be impressed with the evidences of prosperity at Portland and along the line of the new roads entered upon in Maine within the last four years. The results already reached are but the promises of greater ones yet to come, and hold out to our citizens of Maine the most flattering prospect for the future, and encourage them to perseverance in the noble work of perfecting a great system of railways within her own borders.

☞ MR. ANDREW TREW, Engineer, is requested to call at the Railroad Journal office, where he willl hear from a friend who is in the city.

Utica French Burr Mill Stone Manufactory.

THE undersigned, successors to Messrs. M. Hart and Son, in the above establishment, are now prepared to furnish French Burr Mill Stones of best quality and greatly improved workmanship and finish, together with best quality Bolting Cloths, Screen Wire, Hoisting Screws, Lighter Screws, Dansells and Mill Pecks.

Our Mr. Munson who is a practical Miller and Mill Wright, has recently invented and patented a machine on which the Mill Stone, after it is blocked up, is suspended upon its centre, where it is balanced in the course of filling up and finishing, instead of filling up the same without the means of testing the accuracy of its balance, leaving that to be done by the Mill Wright (as is usually the case) in hanging the Stone for actual use in the mill.

In order that the great superiority of Mill Stones finished in this way over all others, may be seen at once, a brief description of the machine and manner of finishing, is herewith given.

An important part of the machine is a heavy circular face plate, which is hung and balanced on a pivot or spindle. This plate has a flange near the outer edge on the under side, which rests on four friction rollers, so that when put in motion it runs perfectly smooth and true, around the opening or eye in the centre of the plate there is raised a flange which receives a hollow cone for forming the eye of the stone. This cone stands perfectly true with the plate, which plate is raised or lowered with a lighter screw. The manner of finishing a stone is by placing it upon the plate and centre it. The skirt is then coated with plaster and turned off perfectly true. The band is then put on hot. This band is wide, (with iron tubes fitted in for the pin holes) and extends above the edge of the stone in its unfinished state, leaving a vacancy between the eye and the band, which is to be filled up in the finishing. It is in this filling up and finishing of the stone that the balancing of it is performed. The means being here afforded as described of raising the stone free from the friction rollers and holding it suspended on the spindle or cock-head, and in that condition observing its balance when at rest or by application of motive power, communicating to the stone a swift motion, and in that condition by observing its balance it can very accurately be ascertained which side of the stone preponderates and where to apply the heaviest filling. This test is strictly observed until the necessary thickness is obtained. When the filling is completed a coat of plaster is put on and the top is nicely turned off, and the stone is complete. During the whole process the means are afforded of testing its balance both at rest and in motion. So that when the process of construction is complete and the mill stone finished, it is not only constructed otherwise favorable to the perfection of the stone, but the stone is also throughly balanced.

All of our stock will be selected and manufactured under the direction and superintendence of our Mr. Munson, which together with his loug experience in the business will be a sufficient guaranty that the high reputation of this establishment will be fully sustained.

Confident that we can offer greater inducements to purchasers of Mill Stones, Bolting Cloths etc., than any other establishment in this country, a share of public patronage is respectfully solicited.

HART & MUNSON,

Utica N. Y. Sep. 1849.

ALBANY AND BUFFALO RAILROADS.—Four Trains daily, Sundays excepted, viz: Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m. Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours. Arrive from Buffalo, 7 p.m., 2½ a.m., 12½ m., 3½ p.m.

Passengers by the *Express Train* reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall,

Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12½, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The *Eastern Trains* leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage *free* between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y
Albany and Schenectady Railroad Co.
Albany, August, 1849.

To Contractors.

BLUE Ridge railroad.—Proposals will be received by the undersigned at his Office in Brooksville, Albermarle county, Va., until the 1st of October next, for the construction of the tunnel through the Blue Ridge, together with the deep cut and embankment connected therewith at each end.

The tunnel will be 4,260 feet long, 16 feet wide and 20 feet high, with a ditch on each side: it will slope eastwardly at the rate of 66 ft. to the mile, and pass 700 feet below the top of the mountain.

Proposals will be received either for the whole or for one-half, it being distinctly stated, in this case, whether the Eastern or Western half is bid for.

Proposers are requested to examine the localities before bidding, and will obtain from the undersigned all necessary information.

The payments will be CASH, with a suitable reservation till the completion of the contract. The best testimonials and an energetic prosecution of the work will be expected,

Printed forms of proposals will be furnished on application to the undersigned.

By order of the President and Directors,

Proposals will also be received until the 15th of Oct. next for the *construction of the Railroad* on the Eastern side of the Mountain, about eight and a half miles. It comprises much heavy work and a Tunnel about 720 feet long.

C. CROZET,
Engineer Blue Ridge Railroad.
Brooksville, July 26, 1849.

TO CONTRACTORS.

ANDROSCOGGIN RAILROAD.—Proposals will be received by the subscriber, at Lewiston Falls, and by W. A. Williams, at the Engineer's Office at Leeds Centre, until the 15th of October next, for the grading and masonry of the 1st division of this road, extending from the Androscoggin and Kennebec railroad in Leeds, to Benjamin's Brook in East Livermore, 14 miles.

Plans and profiles will be ready for examination, and the route shown on and after the 9th day of October.

Proposals for the grading and masonry of the second division, extending from Benjamin's Brook to Livermore Falls, 6 miles, and for building a bridge over the Dead river in the 1st division, will be received as above until the 1st day of November next.

Plans and profiles of the 2d division will be ready for examination, and the line shown, on and after the 23d day of October next.

WILLIAM KILBOURNE, President.
September 29, 1849.

The New York Iron Bridge Co.

LATELY KNOWN AS
Rider's Patent Iron Bridge Co.

THE Company which has hitherto furnished these Bridges, under the patent granted to the late Nathaniel Rider, deceased, have become satisfied that all the principles embraced in their construction, are included in a previous patent, granted in the year 1839, to Col. Stephen H. Long, of U. S. Engineers, and by him designated as "Long's Suspension Bridges," and have therefore made an arrangement with Col. Long, by which they have secured the exclusive right to make and vend these Bridges throughout the whole United States.

The only change consequent upon the new arrangement will be found in the name and style of the Company. The parties composing it being the same, the construction of the Bridges will be essentially the same.

August 4th, 1849. M. M. White, Agent,
au7tf No. 74 Broadway, New York.

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent*,
Albany Iron and Nail Works.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of he imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

NOTICE TO

Superintendents of Railroads.

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, Superintendents, and all others interested in the subject.

P. B. TYLER.

(COPY.)

UNITED STATES PATENT OFFICE,
Washington City, D.C., April 28th, 1846.

SIR: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully, EDMUND BURKE,
Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York.

34tf

Engine and Car Works,

PORTLAND. MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of $250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

Illustrated Scientific Works.

LEA AND BLANCHARD, Philadelphia, publish the following important works on various branches of Practical Science. They will be found exceedingly low in price, while their mechanical and typographical execution are of the best kind.

I.

Principles of mechanics applied to machinery and engineering by Julius Weisbach. Translated by Professor Gordon of Glasgow, and Edited by Professor Walter R. Johnson. In two very handsome octavo volumes, with 872 illustrations on wood.

From Charles H. Haswell, Esq., Engineer in Chief, U. S. N.

The design of the author in supplying the instructor with a guide for teaching, and the student with an auxiliary for the acquirement of the science of mechanics, has, in my opinion, been attained in a most successful manner. The illustrations, in the fullness of their construction, and in typographical execution, are without a parallel. It will afford me much pleasure to recommend its use by the members of the profession with which I am connected.

This work is one of the most interesting to mathematicians than has been laid before us for some time; and we may safely term it a *scientific gem.—The Builder.*

The most valuable contribution to practical science that has yet appeared in this country.—*Athenæum.*

Unequalled by anything of the kind yet produced in this country—the most standard book on mechanics, machinery and engineering now extant—*N. Y. Commercial.*

In every way worthy of being recommended to our readers—*Franklin Institute Journal.*

What he "Mechanique Celeste" is to the astronomer, a treasury of principles, facts, and formulæ on which he may draw on almost any and every occasion, that can be conceived to arise in the field either of demonstration or operation—*Methodist Quarterly Review.*

II.

Technology, or chemistry applied to the arts and to manufactures. By D. F. Knapp, Translated by Drs. Ronalds and Richardson, and Edited by Professor Walter R. Johnson. In two very handsome octavo volumes, with 460 illustrations on wood.

One of the best works of moderate times.—*New York Commercial.*

We think it will prove the most popular, as it is decidedly the best of the series. Written by one who has for many years studied both theoretically and practically the progress which he describes. The descriptions are precise, and conveyed in a simple unpretending style so that they are easily understood, while they are sufficiently full in detail, to include within them everything necessary to the entire comprehension of the operations. The work is also carefully brought down to include the most recent improvements introduced upon the continent of Europe, and thus gives us full descriptions of processes to which reference is frequently made in other works, while many of them are we believe, now for the first time, presented in a complete state to the English reader.—*Franklin Institute Journal.*

In addition to the valuable scientific matter contained in the original work, very extensive American additions have been made to it by the editor, which are exceedingly valuable, and of much interest to the general reader. The publishers have spared no pains in bringing out a work of superior mechanical execution and rare excellence, with numerous skilfully engraved cuts, designed to illustrate the various subjects treated in this work. We feel confident that, as a truly useful publication, it will be eagerly sought after and highly appreciated.—*N. Y. Farmer and Mechanic.*

III.

Principles of Physics and Meteorology, by Professor J. Muller, Edited with additions by R. Eglisfeld Griffith. In one large octavo volume, with 550 wood engravings and two colored plates.

This is a book of no ordinary or ephemeral value.—It is one of a series, now republishing in London, on the different branches of science, which from its thorough character and extended range, is much needed in this country. Its design is to render more easily accessible an extensive knowledge of the general principles of physics and meteorology; and the distinguished author has certainly realized the design to a wonderful extent. The subject treated upon are very numerous—statics, hydrostatics, dynamics, hydrodynamics, pneumatics, the laws of the motions of waves in general, sound, the theory of musical notes, the voice and hearing, geometrical and physical optics, magnetism, electricity and galvanism, in all their subdivisions, heat and meteorology. The size is nevertheless convenient—one handsome octavo volume, of six hundred pages—in clear, bold type, and profusely illustrated. In the execution of the illustrations we have rarely seen any thing equal to this American edition.—*N. Y. Commercial.*

IV.

Practical Pharmacy; comprising the arrangements, apparatus, and manipulations of the Pharmaceutical Shop and Laboratory. By Francis Mohr, Ph. D., and Theophilus Redwood. Edited with alterations and additions by W. Proctor, Jr. One very handsome octavo volume, with 506 engravings on wood.

We had scarcely finished a glance at the beautiful London edition of Mohr and Redwood's pharmacy, before Professor Proctor's improved edition of this fine technical treatise, was laid on our table by Messrs. Lea and Blanchard. This work is one which will at once find its place in every laboratory and pharmacetical shop, and is well calculated to recommend new and improved methods of manipulation to both chemists and pharmaceuts. In the absence of highly appointed laboratories and of pharmaceutical instruction which is so general in this country, such works as the present are particularly valuable. The beautiful and abundant wood cuts which adorn almost every page of the book, enter the descriptions of apparatus perfectly plain, and its reconstruction easy even by the tyro. Professor Proctor has long been known to pharmaceutical readers in this country, as the author of numerous and important researches in the Materia Medica, and his additions to the present edition of Mohr and Redwood are frequent and valuable.

The American Journal of Science and Arts.

V.

The Young Millwright and Millers Guide; Illustrated by Twenty Eight Descriptive Plates, by Oliver Evans. Twelth Edition, with additions and corrections, by Thomas P. Jones, with a description of an Improved Merchant Flour Mill, with Engravings, by C. and O. Evans. In one volume 8vo., with 110 figures on twenty eight plates.

Plumbago, or Black Lead,

BLACK LEAD IN ITS CRUDE STATE, AND Black Lead Paints, prepared for various purposes. This paint is peculiarly adapted for the covering of all kinds of iron railing, or iron work wherever exposed; such as railroad bars, anchors, bolts for vessels, etc.—It makes the most durable paint to protect woodwork from moisture, and the indestructable nature of the body of it peculiarly fits it for covering the inside of depots, roofs of buildings, and all wood work exposed to fire.

The mine from which this article is taken is near Raleigh N. C. It has been examined by many of the most scientific men in this country, who all concur in pronouncing it of the best quality. In the fourth vol. of the American Journal of science, Professor Silliman speaks of it in the following manner. "The Plumbago from North Carolina is of a very fine quality and appears well adapted for pot & crayons." Professor Dewy speaks of it "as the finest he ever saw." Professor Olmstead, now of Yale College in his geological report of the State of North Carolina, Page 5 says.—"Not long since I received a letter from a gentleman in Vermont who contemplated setting up the manufacture of Black Lead Pots or Crucibles, requesting some particulars respecting this Plumbago, having been informed on the highest authority, that it was the best that could be procured within the United States."

It is a very fine article and superior for Pencils also for Crusibles, Pots etc., when the composition of silicious minerals is properly made to suit it, and may be had in any reasonable quantities of the subscriber on liberal terms at Raleigh North Carolina or at James Holdene 55 West St. New York.

Sep., 7th 1849. Richard Smith,

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and *warranted to perform well.* Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price $1,500.

Address J. B. MOORHEAD,
Frazer P.O., Chester county, Pa.

P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia.

September 6, 1849.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

Pennsylvania Railroad.

PROPOLALS will be received at Johnstown, Cambria county, Pa., between the 1st and 12th of October next, for the Graduation and Masonry of that portion of the Western Division of the *Pennsylvania Railroad* east of Section No. 54, opposite Blairsville—a distance of 26 miles—embracing a considerable am't of heavy excavation and embankment.

Plans and specifications of the work may be seen at the office, in Johnstown, within the periods above mentioned.

For further information apply to Edward Miller, Esq., Engineer of the Western Division, Summit P. O, Cambria county, J. EDGAR THOMSON,
Chief Engineer and General Superintendant.

Engineer Department P. R. R. Co.,
Philadelphia, Sept. 6, 1849.

ENGINEERS.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Bancks, C. W.,
Engineer's Office, Southern Railroad, Jackson, Miss.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Higgins, B.
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,
Androscggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

BUSINESS CARDS.

Andrew W. Craven,
Chief Engineer Croton Aqueduct, New York.

Walter R. Johnson,
CIVIL AND NINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Cruse & Burke,
Civil Engineers, Architects and Surveyors,
Office, New York State Institution of Civil Engineers,
STATE HALL, ALBANY., N. Y.

Drawings, specifications and surveys accurately executed. Pupils instructed theoretically and practically at a moderate premium.
May 26, 1849.

Eaton, Gilbert & Co.,
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Hudson River Foundry,
THOMAS & COLLINS,
130 Quay Street, Albany.

To Railroad & Navigation Cos.

MR. M. BUTT HEWSON, *Civil Engineer*, offers his services to Companies about to carry out the surveys or works of a line of Navigation or Railroad. He can give satisfactory references in New York City as to his professional qualifications; and will therefore merely refer here to the fact of his having been engaged for upwards of two years conducting important Public Works for the British Government.

Communications will find Mr. Hewson at the office of the Railroad Journal, 54 Wall Street, New York.

J. T. Hodge,
Eagle River P. O. Lake Superior.

James Laurie, *Civil Engineer,*
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.

Railroad Routes explored and surveyed. Estimates Plans and Specifications furnished for Dams, Bridges Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.

Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

To Railroad Companies.
—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,

Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.
May 16, 1849.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED' —'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic dams, etc., etc.
July, 27, 1849.

IRON.

Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.

They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.
March 29 1849. 3m.13

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Bro. Baltimore Md

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.

These are the ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers
THOMAS PROSSER,
Patentee.
28 Platt street, New York

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,
February 3, 1849. New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 15, 1849 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna River; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.
REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to

COOPER & HEWITT, *Agents.*
17 Burling Slip, New York.

October 30, 1848.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150 tons No. 1 Boonton Foundry Pig Iron.
100 " No. 2 do. do.
300 " Nos. 2 & 3 Forge do. do.
100 " No. 2 Glendon do. do.
140 " Nos. 2 & 3 Lehigh Crane do do.
100 " No. 1 Pompton Charcoal do.
100 " New-Jersey Blooms
50 " New-Jersey Faggoting Iron, for shafts

Best Bars, ¼ to 4 inch by ¼ to 1 inch thick.
Do do Rounds and Squares, ⅜ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, ½ to 1 in. Ovals & Half Ovals ½ to 1¼ in.
Bands, 1¼ to 4 inch. Hoops, ⅜ to 2 inch.
Trunk Hoops, ⅜ to 1¼ in. Horse Shoe & Nut Iron.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale, *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blast* Charcoal Pig Iron from the *Cloverdale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.

Baltimore, June 14, 1849. 6 mos

Patents for Inventions.

THE Subscriber offers his services for the procuration of Patents in the UNITED STATES; in the CANADAS and other British Colonial possessions; in the SPANISH, FRENCH and other WEST INDIES.

ALSO IN EUROPE.

ENGLAND WITH COLONIES; SCOTLAND and IRELAND. FRANCE, BELGIUM HOLLAND, etc.

☞ The foreign patents are procured through special agents, established by, and solely responsible to this establishment. At this office may be obtained all documents required in patent business; *Deeds, Conveyances, Agreements, Assignments*, etc. Counsel given on questions involving points of law in Contested Cases, and written opinions, on the title claims, etc., where the validity of a Patent is questioned.

MECHANICAL ENGINEERING DEPARTMENT.

Drawings of all kinds furnished to parties who wish to prosecute their own patent business. Accurate working drawings for Pattern Makers or for making Contracts with Manufacturers; calculations and drawings made, for constructing difficult and complicated machines or parts of machines. Draughtsmen furnished to take Drawings of Mills, Mill Sites, and Machinery, in any part of the country.

Pamphlets, containing full information on the above subjects, furnished gratis.

JOSEPH P. PIRSSON, Civil Engineer,
Offic, No. 5 Wall St.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

FRANKLIN TOWNSEND & CO.

Albany, August 18, 1849.

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc, by

JOHN A. ROEBLING, *Civil Engineer*,
Pittsburgh, Pa.

These *Ropes* are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

Railroad Iron.

OF approved T patterns, weighing 56 to 60 lbs. per lineal yard, made by the best English manufacturers, and under our own specification and inspection. In store and to arrive. For sale by

DAVIS, BROOKS, & CO.,
68 Broad street.

New York, June 1, 1849. t

☞ The above will favorably compare with any other rails.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,

HAVING THEIR

IRON FOUNDRY AND MACHINE SHOP

In complete operation, are prepared to execute faithfully and promptly, orders for

Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞ Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

American and Foreign Iron.

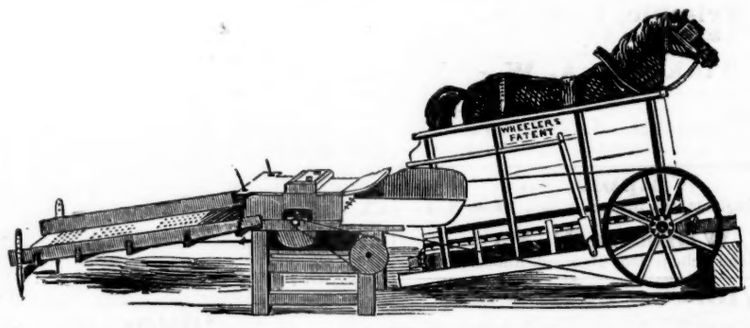
FOR SALE,

300 Tons A 1, Iron Dale Foundry Iron.
100 " 1, " " "
100 " 2, " " "
100 " " Forge "
400 " Wilkesbarre " "
100 " "Roaring Run" Foundry Iron.
300 " Fort " "
50 " Catoctin " "
250 " Chikiswalungo " "
50 " "Columbia" "chilling" iron, a very superior article for car wheels.
75 " "Columbia" refined boiler blooms.
30 " 1 x ¼ Slit iron.
50 " Best Penna. boiler iron.
50 " "Puddled" "
50 " Bagnall & Sons refined bar iron.
50 " Common bar iron.

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,
New York. 64 South street

Railroad Horse Power and Saw Mill.



The above cut represents the most simply constructed Endless Railway Power in use. As shown it is attached to a threshing machine, with which it is most extensively used; but for sawing wood at railroad stations it has no superior. The saw mill which accompanies it is simple, cheap and convenient. The single power by the weight of the horse at the elevation of one and a half inches to the foot—the horse weighing eleven hundred pounds—is capable, with the attention of at most three men, of sawing twice in two from 12 to 20 cords of four foot wood per day. They have been used several years on several roads in New England, and for manufacturing establishments more than three thousand of these powers are in use, and without exception have given universal satisfaction. Their principal advantage is, their great simplicity: the full speed being obtained with simple rack and pinion, without intermediate gearing. They are warranted to give satisfaction as above described, or may be returned at my expense, and the purchase money refunded.

HORACE L. EMERY,
Nos. 469 & 371 Broadway, Albany, N. Y.

September 6, 1849.

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT,
cor. Steuben and Water sts. Albany.

August 24, 1848.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,
Prest. Beaver Meadow Railroad & Coal Co.,
Philadelphia.
or, L. CHAMBERLAIN, Sec'y,
at Beaver Meadow, Pa.

May 19, 1849. 20tf

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.

New York, May 21, 1849.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee. G. A. NICOLLS,
Reading, Pa.

To Steam Engine Builders.

THE Undersigned offer for sale, *at less than half its cost*, the following *new machinery*, calculated for an engine of 62 inches cylinder and 10 feet stroke, viz:

2 Wrought Iron Cranks, 60 inches from centre to centre.
1 Do. do. Connecting Rod Strap.
2 Do. do. Crank Pins.
1 Eccentric Strap.
1 Diagonal Link with Brasses.
1 Cast Iron Lever Beam (forked).

The above machinery was made at the West Point Foundry for the U. S. Steamer Missouri, without regard to expense, is all finished complete for putting together, and has never been used. Drawings of the cranks can be seen on application to

HENRY THOMPSON & SON,
No. 57 South Gay St., Baltimore, Md.

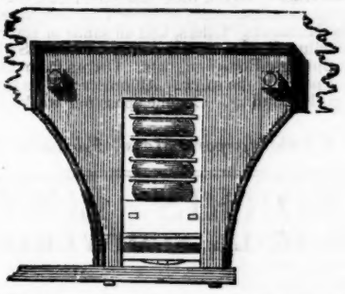
Sept. 12, 1849.

Steam Boiler Explosions.

THE Subscriber having been appointed sole Agent for Faber's Magnetic Water Gauge, is now ready to supply the trade, and also individuals with this celebrated instrument. Besides the greatest safety from explosion resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow off." Pamphlets containing full information, can be had free on application to the Agent,

JOSEPH P. PIRSSON,
Civil Engineer, 5 Wall st.

Patent India-rubber Springs.



FULLER & CO. beg that parties interested in the use of these Springs will not be misled by ex parte statements, but will examine the actual Patents and judge for themselves.

The statements made by Messrs. Crane & Ray shall be treated seriatim.

They claim to have first introduced India-rubber Springs about two years since, whereas they were used by Fuller & Co. nearly four yeas ago.

They claim the exclusive right to use Sprngs. They have no right whatever; every spring they make is an infringement upon Fuller's patent, dated 1845. They claim the sole right to make India rubber, and apparently think because a species of India-rubber was patented some years since, that no person can make any other now. A patent was *granted in January last* to Messrs. Tyer & Helm for a new and improved kind of Vulcanized rubber which is used by Fuller & Co.

Fuller's springs it is needless to say are in very general use, although Messrs. Crane & Ray pretend that they know of only one or two instances. Fuller & Co. guarantee all parties who use their springs.

As to the Legal proceedings—an action has been commenced against one company for an alleged infringement of Goodyear's patent, but is being defended with every prospect of success. An action has also been commenced by Fuller & Co., against parties for an infringement of Fuller's patent, and *this will be done in every case of violation.*

In every case in which Fuller's spring has been applied, it has been pronounced superior to that made by Mr. Ray, and this fact induces Messrs. Crane & Ray to claim the right of using it. They attempt to lead the public from the real question at issue, by producing a Deposition as to Mr. Ray having *tried to make* a spring which Mr. Fuller *did make* and patent. If Mr. Ray did invent a spring in 1844, why did he not apply for a patent, and not wait until 1848, when his application was rejected!

Mr. Knevitt has never stated that the springs were put on by him, which are refered to in Mr. Hale's article, but he does state that those springs are made according to Mr. Fuller's specification, and consequently are an infringement upon it. The article of Mr. Hale in the Boston Advertiser, quoted by Messrs Crane & Ray, was followed immediately by a letter in the same paper, from Mr. Knevitt, setting forth the facts of the case.

The springs refered to were put on by Mr. Ray before Mr. Knevitt came to the United States; when he arrived he gave Mr. Ray notice not to proceed further in making or vending such springs; Mr. Ray then said he did not wish to infringe, and would not continue to do so, and he then contrived an India-rubber and Air spring which totally failed.

In the selection of their first agent, Fuller & Co. were particularly unfortunate, and their reason for adverting to it is simply that it may tend to throw light on subsequent transactions, and furnish a reply to the remark, "that this opposition was invited by their own delay in getting the thing to work." The individual refered to undertook the agency for Fuller's springs, and left Liverpool on the 1st January, 1847, furnished with a complete set of drawings, models, etc., and every necessary instruction to make arrangements respecting the supply of material, and to have it at work within the time limited by law; but *from that hour to the present, not a single communication has been received from the said agent.* Some of their models, however, they have traced into the hands of parties now seeking to invade their rights, and by whom they understand they have been exhibited as specimens of their own invention.

The superiority of Fuller's spring is implied in the offer of the New England Car Co. to make springs upon his principle (now that a preference is given to the disc and plate form) and this notwithstanding the fact, that Fuller & Co. have a patent, and that Mr. Ray's application for one was rejected. The public can judge which company's course has been the most honorable, or whose statements are entitled to consideration.

Fuller's springs can be obtained of *Mr. Knevitt* the Agent, at 38 Broadway New York, and of *Messrs James Lee & Co.*, 18 India Wharf, Boston.

May 26, 1849.

C. W. Bentley & Co,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Plowman Sts., near Balttmore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,

Baltimore, June 6, 1849.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,

SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.

Philadelphia, June 16, 1849. 1y25

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

Text Book of Mechanical Drawing,

FOR the use of SCHOOLS and SELF-INSTRUCTION, containing,

1st. A series of progressive practical problems in Geometry, with full explanations, couched in plain and simple terms; showing also the construction of the *parallel ruler, plane scales* and *protractor.*

2d. Examples for drawing *plans, sections* and *elevations* of Buildings and Machinery, the mode of drawing elevations from *circular* and *polygonal* plans, and the drawing of Roman and Grecian Mouldings.

3d. An introduction to *Isometrical drawing*, with 4 plates of examples.

4th. A treatise on *Linear Perspective*, with numerous examples and full explanations, rendering the study of the art easy and agreeable.

5th. Examples for the projection of shadows.

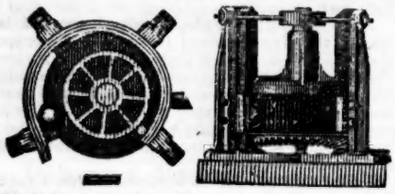
The whole illustrated with 50 STEEL PLATES.

Published by WM. MINIFIE & CO.,
114 Baltimore St., Baltimore, Md.

Price $3, to be had of all the principal booksellers.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has give universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

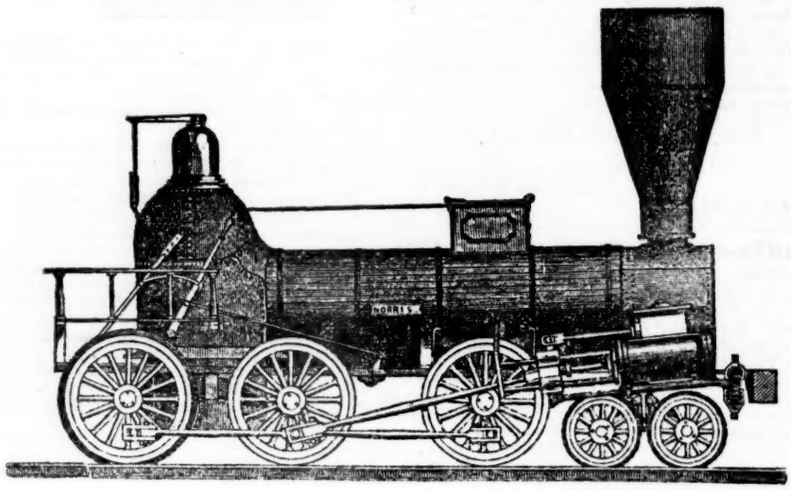
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds —including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

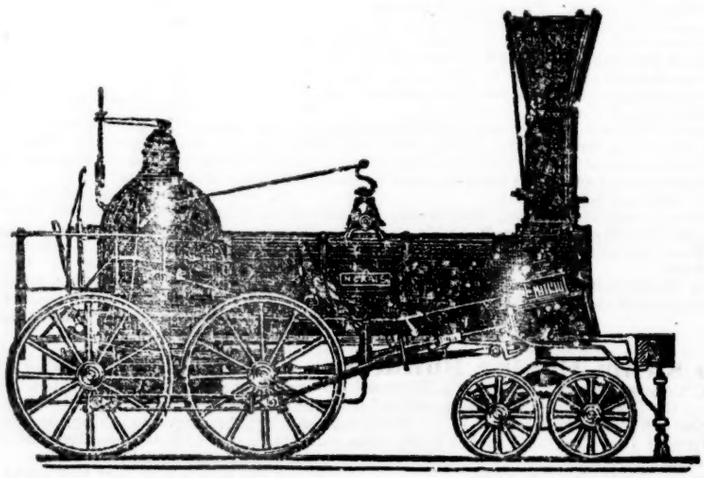
DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.